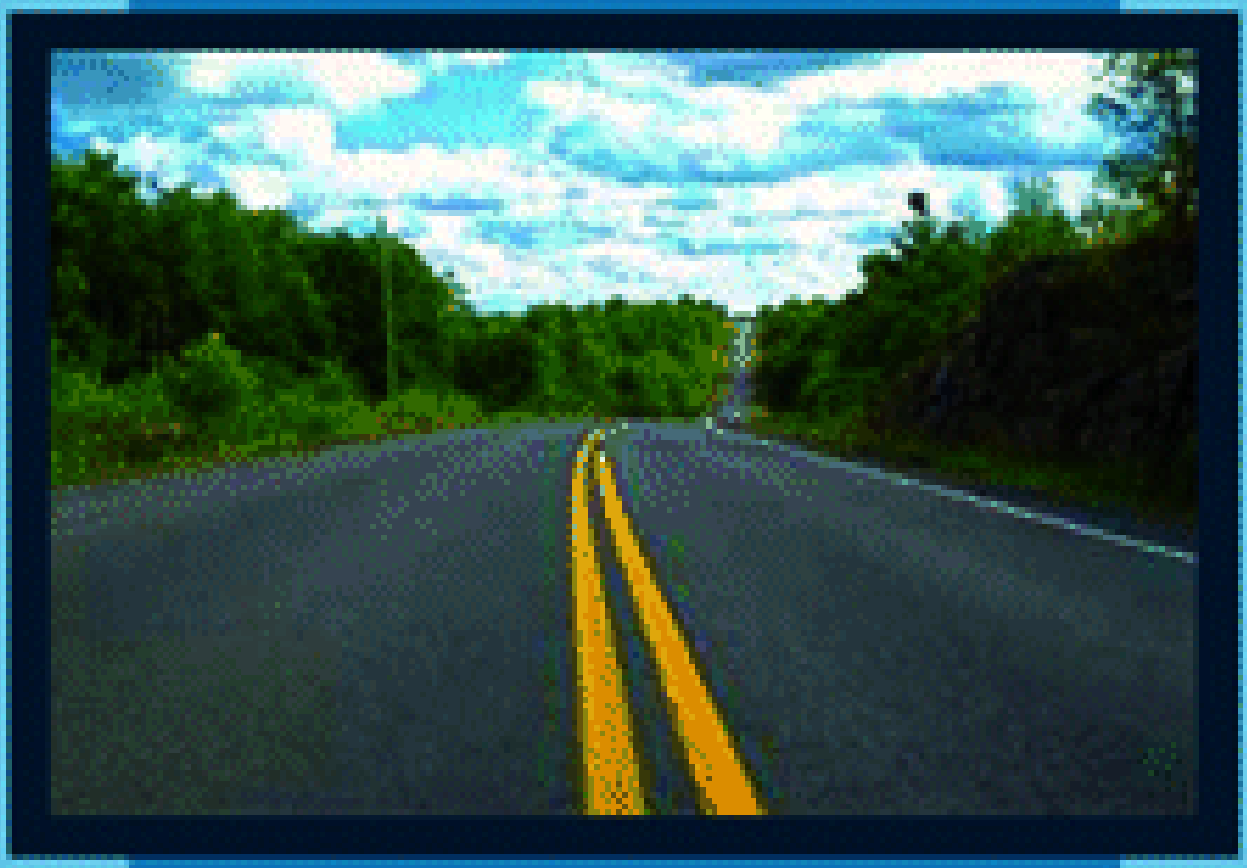
THE ROAD AHEAD



Uncertainty and Opportunity in a Changed World

KENTUCKY

LONG TERM POLICY RESEARCH CENTER

THE ROAD AHEAD

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PREFACE

As part of its mission to advise and inform the Governor, the General Assembly, and the public about the long-term implications of trends and policies, the Kentucky Long-Term Policy Research Center presents the 2002 biennial trends report, the fifth in this series. In accordance with the Center's statutory requirements, this report is designed to inform policymakers and citizens about trends that are likely to influence the future of the state. There are 13 chapters written by nine different authors from six different agencies or organizations.

The report is designed so that it is not necessary to read it in its entirety. That is, each chapter can be read as a separate piece, and understanding it does not depend on having read the previous chapter, although on occasion one chapter will refer to material in another. This structure enables readers who have an interest in a specific topic to read only the chapter that deals with that area. The work can also be read from front to back.

Finally, the CD-ROM accompanying this report contains 13 video presentations. These videos, each about five minutes long and narrated by the chapter author, use dynamic figures to illustrate the key points. From policymakers at every level to ordinary citizens of the Commonwealth, all who are interested in and concerned about improving the Commonwealth's future will find this report and CD-ROM of interest.

KENTUCKY

LONG-TERM POLICY RESEARCH CENTER

The Kentucky Long-Term Policy Research Center was created by the General Assembly in 1992 to bring a broader context to the decisionmaking process. The Center's mission is to illuminate the long-range implications of current policies, emerging issues, and trends influencing the Commonwealth's future. The Center has a responsibility to identify and study issues of long-term significance to the Commonwealth and to serve as a mechanism for coordinating resources and groups to focus on long-range planning.

Michael T. Childress serves as the Executive Director of the Kentucky Long-Term Policy Research Center. For further information, log on to the Center's website at: www.kltprc.net, or contact the Center at:

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SUMMARY

While it is easy to feel immune from terrorism and its consequences here in Kentucky, it would be a mistake to believe we are. The terrorist attacks on September 11, 2001, and subsequent anthrax incidents indelibly scarred the United States, and the long-term consequences remain uncertain. Gallup pollsters find that Americans believe the most important problems facing the country are the war on terrorism and the economy, followed by health care, ethics and morals, and education. For their part, Kentuckians view safe and caring communities, strong families, accessible health care, and an excellent system of lifelong learning as the most important goals for our state. Against a backdrop of an already full public policy agenda, the specter of terrorism has spawned a number of homeland security initiatives and a concern about how to finance a growing list of governmental responsibilities. For sure, the terrorist attacks have caused a shift in U.S. foreign, defense, and domestic policy that could have significant and far-reaching implications for state and local government responsibilities, public finance, the economy, and civic engagement. The essays in this volume address a wide spectrum of issues, illuminating how terrorism—and the war against it—might shape our lives in Kentucky.

INCREASED RESPONSIBILITIES

Perhaps the most obvious consequence of the terrorist attacks for state and local governments is the overall increase in their responsibilities. For example, the states' legislatures and governors have developed long lists of homeland security initiatives, which include everything from bolstering the public health system to ensuring agriculture and food safety to developing the capability for dealing with a chemical, nuclear, or biological attack. The states are clearly hoping the federal government will pay for these initiatives, but the U.S. Office of Homeland Security has stated that "it is critical that *all* levels of government work cooperatively to shoulder the costs of homeland security." As the locus of responsibility for launching and financing new initiatives shifts from the federal to the state and local level, so too will the relative authority among them. While proponents of state and local control will welcome a federalist revival, they will find the war on terrorism expensive. According to a survey conducted in June 2002 by Deloitte Consulting, Inc., homeland security expenditures by federal, state, and local governments and the private sector could range from $98 billion to $138 billion in 2003, or between $340 and $480 for every American. By comparison, education expenditures, the largest spending category for government, were around $483 billion in 1999 or about $1,780 for every American.

In the case of health care—or the lack of it—circumstances worsened in the wake of 9/11. The jolt to our already sagging economy raised unemployment and severed the link to health insurance for more Americans. During 2001, the gains in the insured population that had been realized over the two prior years were reversed, even as the insured population rose. Moreover, health care costs have for

now slipped the tenuous leash of managed care and raced to double-digit annual increases that threaten public, private, and personal budgets and virtually guarantee more uninsured Americans.

While the chilling threat of terrorism and war and economic uncertainty may have dulled the sense of urgency that once prompted our concerns about health care, none of us is likely to escape the effects of what many analysts conclude is a brewing crisis. Indeed, if the current "jobless recovery" continues, the homeland will almost certainly become less and less secure for millions of Americans of all ages who cannot afford health insurance, health care, or the often pricey centerpiece of medical care today—prescription drugs. Indeed, new and newly revived problems lie just beneath the glittering surface of our technologically sophisticated health care system, the capabilities of which are, arguably, the envy of the world, even as its inaccessibility is frequently the target of condemnation. As the population ages, the collective demands on the health care system and the financial structure that sustains it will increase, bringing its limitations into sharper focus.

In Kentucky, subtle, slowly evolving demographic changes that are likely to expand state and local responsibilities are also underway. Over the last four decades, the state population not only grew by one million, but its structure or composition changed as well. The aging of the population—often referred to as its *graying*—is an example of this structural change. More Kentuckians are living longer and older age cohorts form larger shares of the total population. From 1960 through 1980, the median age in the state was below the national median age; hence, Kentuckians could be considered younger than the U.S. population. By 1990, the state and national medians were roughly equal at 33 years. By 2000, the state's median age was 35.9 years and the U.S. median was 35.3. Kentuckians are now, albeit only slightly, older than the U.S. population. The fact that our population went from one that was younger than the U.S. population to one that is older reflects an important trend with significant consequences—consequences that the Commonwealth must deal with before many other parts of the nation do. And while demography is not destiny, these trends suggest that increased responsibilities lie on the horizon.

ENDURING FOCUS ON PUBLIC FINANCE AND EDUCATION

Increased governmental responsibilities for financing homeland security and other initiatives virtually ensure an enduring focus on public finance. The reason is simple: as barren as the public finance landscape is today with more than 40 states, including Kentucky, reporting budget gaps, it could get worse. In fact, the Fox Report on Kentucky's revenue system stated in February 2002 that the total state budget shortfall to 2010 could be as much as $2.3 billion, and this does not include additional expenses associated with homeland security.

One word captures the recent history of state and local taxes: erosion. For example, Bruce and Fox estimate that from 1979 to 2000, the sales tax base has fallen nationally from 51 percent of personal income to 42 percent. In 1996, Kentucky ranked 29th out of 45 states in sales tax as a percentage of personal income. Bruce and Fox further estimate that between 1996 and 2003, this figure will decline

in Kentucky by more than 2 percentage points. Kentucky's state and local governments are experiencing the erosive effect of changes in technology and the economy on the tax base while continuing to give tax breaks to constituents and to new business ventures. The overriding effect is a reduction in the elasticity of the tax structure, as it loses its ability to grow with the economy.

Most of state and local government spending, about 30 percent of all expenditures in Kentucky, are for education. And those expenditures are yielding returns for the Commonwealth. Kentuckians have much to celebrate on the education front. Recent census data suggest that the devaluation of education that for too long was an unmistakable feature of Kentucky culture is being reversed. Young people clearly are hearing a new message, and it has translated into above-national-average gains in high school graduation rates among the state's youngest workers. Kentuckians, for example, can celebrate the first-ever rise above the national average in the percent of young adults 25 to 34 years old with a high school diploma. They can also applaud the elementary schools for staying on track to reach their accountability index goals. Moreover, migrants to the state are complementing a growing body of Kentuckians who hold advanced degrees, representing one of the largest gains in an educated populace in the nation.

Despite the considerable gains Kentucky has made in educational attainment and achievement over the past decade, some areas need improvement. For instance, our students show mixed success on the National Assessment of Educational Progress test. Also, Kentucky still ranks at or near the bottom for attainment of a four-year college degree.

But the cost of higher education is discouraging to many. Rising tuition and fees are changing perceptions about the affordability of college. While most Americans see a college education as having become equivalent to what a high school diploma once was *and* as essential to getting ahead, most perceive its cost as becoming unaffordable for the average family. At the same time, funding for grants has declined as a share of federal financial aid while loans have increased. In turn, student debt has risen.

Kentucky policymakers, however, have made considerable effort to match funds for the state's inclusive merit-based KEES program with expanded commitments to its need-based financial aid programs, but continued revenue shortfalls are likely to undermine the future of one or both and possibly cost the state important momentum. Further, inadequate revenue calls into question whether the 2006 statutory requirement of 55 percent of all lottery proceeds to need-based programs and 45 percent of proceeds to the KEES program is the appropriate split between need- and merit-based student aid.

Finally, the Commonwealth's pursuit of improved educational status is not being made in a vacuum. Other states are racing along the same path, effectively negating many of our achievements relative to the nation. While we have made important gains that bode well for the state's future, they will not reverse decades of undereducation and poverty without a vigilant effort to close academic, cultural, experiential, and financial gaps. Consequently, the cacophony of voices calling for reforming or modernizing antiquated state *and local* revenue systems will likely grow louder as Kentucky continues down the path of educational reform.

CHANGING ECONOMIC LANDSCAPE

Rising educational achievement in Kentucky has translated into lower poverty rates and higher per capita income. According to the U.S. Census Bureau, Kentucky's per capita income rose 20 percent during the 1990s to about $18,600 in 1999, or to 84 percent of the national average. Likewise, the poverty rate decreased from 19 percent in 1989 to 15.8 percent in 1999. Despite these important gains, minorities and single-parent families have not kept pace. Moreover, a yawning gap in economic opportunity divides urban and rural Kentucky.

The diverging trends in per capita income and average wages between rural and urban Kentucky are issues of concern. Per capita income and average wages are measures of economic opportunity. If rural Kentucky is falling behind urban Kentucky on these indicators, people are more likely to leave rural areas in search of good-paying jobs. When commuting from one county to work in another, they lose time with their families and in their communities. The potential for driving accidents may be greater, and the cost of wear and tear on vehicles can be high. Finally, the state's highways and roads become more crowded, as people are forced to drive farther to find good-paying jobs. Even worse, Kentucky often permanently loses the social and economic benefit when workers choose to migrate from rural areas completely as an alternative to long drives.

As economic opportunity becomes more concentrated, so does the population distribution. The result can be urban sprawl, road congestion, environmental degradation, and loss of green space. Indeed, from 1982 to 1997 the amount of developed land in Kentucky increased by 52 percent—the seventh highest rate of increase in the nation—with most of it being prime farmland and occurring in the state's urban triangle. Furthermore, while Kentucky's environment is generally cleaner now than 25 years ago, a growing population and expanding economy could negatively affect Kentucky's environment in the future.

Many factors will determine Kentucky's economic future, of course, including the extent to which individuals and businesses use the tools of the Information Age—computers and the Internet. Three major trends are underway with respect to *individual* use of information technology in Kentucky. First, computer and Internet use have increased significantly over the last several years. Second, there are large differences in technology access and use among social, economic, and demographic groups. Third, these differences have been getting smaller. Two major trends characterize the *business* use of technology: the percentage of large businesses in the state using the Internet to conduct online sales continues to grow, albeit at a significantly slower pace, while the percentage of small businesses conducting online sales actually shrunk over the previous year.

The prosperity of the 1990s and the tragedy of the terrorist attacks reflect the dual nature of technology and globalization. While the expanded integration of international economies fosters economic growth among nations, the openness it fosters heightens vulnerability to terrorist attacks. This duality forces the nation and its states to make tough choices and compromises in the way they do business in the new world economy. Supporters of globalization's increasingly close economic ties among countries, including trade, travel, immigration, information shared

over the Internet, increased investment in foreign countries and an accelerated pace of technological advance, praise the benefits of such ties. Expansion of economic freedom through globalization spurs competition, which in turn raises productivity and living standards in countries that open themselves to the global market. However, some consequences of globalization, such as environmental degradation, health crises, and the loss of lower skilled jobs, as Kentucky has experienced, engender feelings ranging from disillusionment to animosity among its opponents. Ironically, the same forces that helped fuel this growth and prosperity—the Internet, global financial networks, and commercial aviation—are the very ones that permitted terrorists to wreak havoc on our homeland.

The threat of terrorism could alter the nation's economic landscape across multiple sectors and endure for years. For example, the vulnerability of the international trading system to terrorist attack could affect future prospects for global commerce. The value of U.S. trade is currently equal to about 25 percent of the country's gross domestic product and has increased markedly during the last several years, especially in Kentucky. Hundreds of Kentucky businesses depend on the free flow of global commerce for a healthy bottom line. Immigration may be affected too. Overall, Kentucky has a relatively small, albeit growing, foreign-born population. However, some sectors of Kentucky's economy rely on immigrant labor. Also, the transformation of military force structure to fight terrorism could have significant implications for base realignment and closure in 2005 and beyond, which will in turn affect state and regional economies. In Kentucky alone, the military spends about $4 billion each year, mainly due to the presence of Fort Campbell and Fort Knox. While Kentucky may not have been directly affected by the terrorist attacks on September 11, the long-term consequences of those tragic events may yet affect our state and its global economic endeavors.

RISING RELEVANCE FOR CIVIC ENGAGEMENT

In an era of fiscal constraint, it is likely that governments will look increasingly to community-based organizations, nonprofits, businesses, and citizens to forge partnerships and relationships to meet new challenges. Indeed, this is already beginning to happen. The Bush administration, for example, has created an organizing framework to marshal volunteers in homeland security efforts. The initiative, Citizen Corps, is described as "a local, community-based initiative to have every American become active participants in the homeland security effort." These citizen volunteers serve as low-cost extensions of state and local government personnel. As such, these programs allow government to do more with less by encouraging active civic engagement.

The challenge for policymakers and other community leaders will be to build on a rejuvenated sense of civic engagement and to facilitate broad-based community involvement in other issue areas besides public safety and homeland security. Mounting responsibilities for state and local governments coupled with constrained resources portend rising relevance for civic engagement. Stronger social capital will not only enable government to do more with less but will also strengthen the ties that bind us in the changed world ahead.

AUTHORS

Michael T. Childress serves as Executive Director of the Kentucky Long-Term Policy Research Center, a post he has held since the Center began its work in 1993. Childress received his B.A. from the University of Kentucky in 1984 and an M.A. from the University of California, Los Angeles, in 1986—both in political science. From 1988 to 1993, he was an analyst at the RAND Corporation in Santa Monica, California. While at RAND, he authored numerous studies on topics ranging from demographic trends in the third world to the implications of declining budgets for the U.S. Army. While at the Center, he has authored reports on the future of tobacco, entrepreneurism, child care, technology use, electronic commerce, state and local taxation, and the implications of "9/11" for Kentucky.

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The Board of Directors and the staff of the Kentucky Long-Term Policy Research Center wish to acknowledge and thank the many individuals who contributed to this volume, as writers, advisors, and reviewers. Each of them took time from busy and demanding schedules to contribute to this project.

In house, as always, we are grateful for the thoughtful contributions of our Board members. We are also grateful for the energies of Suzanne King, whose layout expertise helped move this project ahead, and to Billie Sebastian, whose proofreading, editing, and "html" skills (on the accompanying CD-ROM) are, as always, deeply valued. Mark Schirmer, in addition to writing a chapter, demonstrates his range of skills by also producing the videos on the CD-ROM.

We also wish to thank Jennifer Schirmer, Publication and Design Specialist for the Legislative Research Commission, for finding the time in a busy schedule to design the cover for this volume. We believe it not only represents our agency well but also Jennifer's considerable talent.

For his as-always painstaking and careful editing of this report and the improvements to these chapters that his work enabled, we remain grateful to our editor, Jerry Sollinger.

While many individuals contributed to the content and structure of this report, the Kentucky Long-Term Policy Research Center assumes full responsibility for its content.

A CHANGED WORLD

9/11'S IMPLICATIONS FOR KENTUCKY

By Michael T. Childress
Kentucky Long-Term Policy Research Center

The terrorist attacks of September 11, 2001, and subsequent anthrax incidents have indelibly marked the United States. While the calculable short-term cost was as much as $80 billion in property damage and around 3,000 fatalities,[1] the long-term consequences are less obvious or certain. It appears, however, that the resulting shift in U.S. foreign, defense, and domestic policy could have significant and far-reaching implications for state and local government responsibilities, the economy, public finance, and civic engagement. State and local policymakers must anticipate the future challenges and opportunities created by these events so that they can develop appropriate long-term policies for the changed world.

AN EMERGING FEDERALIST REVIVAL

Perhaps the most obvious consequence of the terrorist attacks for state and local governments is the overall increase in their responsibilities, portending an emerging federalist revival. For example, the states' legislatures and governors have developed long lists of homeland security initiatives, which include everything from bolstering the public health system to ensuring agriculture and food safety to developing the capacity for dealing with a chemical, nuclear, or biological attack.[2] The states are clearly hoping the federal government will pay for these initiatives, but the federal government has stated that "it is critical that all levels of government work cooperatively to shoulder the costs of homeland security."[3] As the locus of responsibility for launching and financing new initiatives shifts from the federal to the state and local levels, so too will the relative authority among them.

More Heavy Lifting and Better Preparation. These attacks will likely accelerate the shift in fiscal federalism, where state and local governments assume responsibility for tasks traditionally provided by the federal government. As the FBI and Coast Guard shift their focus to counterterrorism, for instance, state and local offi-

cials anticipate playing a larger role in fighting illegal drug traffic, investigating white-collar crimes, and handling search-and-rescue missions. In addition to taking on new roles, long-standing ones such as public health, public safety, and network security are *expanding*, and underlying the increased workload is the expectation that these functions be performed *better*.

Evidence, however, suggests that much work remains to be done. To ascertain the level of preparedness for a chemical or biological terrorist attack, RAND conducted a national survey from March to September 2001, involving more than 1,000 state and local organizations, and ranging from fire departments to emergency medical services to offices of emergency response. The survey results show "few organizations have a plan in place sufficient to address [a] moderately sized chemical and biological incident."[4] Even a year after the September 2001 attacks, studies show that many of these organizations are not prepared for a terrorist attack. The Federation of American Scientists, for example, issued a report in which it noted that most emergency responders (police, fire, emergency medical technicians, etc.) feel they are not prepared for a weapon of mass destruction emergency.[5] And a survey of schools by the National Association of School Resource Officers found that "an overwhelming majority (95 percent) of school-based police officers feel that their schools are vulnerable to a terrorist attack and a substantial percentage of officers (79 percent) do not feel that schools within their districts are adequately prepared to respond to a terrorism attack on their schools."[6] In the future, state and local governments will be expected to do more and do it better.

Enhanced Coordination and Cooperation. As the authority and responsibility of state and local governments increase, so does the necessity to work together cooperatively. Yet, the relationships between and among states, counties, and cities can best be described as competitive. States vie with each other for everything from industrial locations to federal dollars. Cities, counties, and regions within states are similarly competitive. However, a new culture of cooperation along with mechanisms for coordination will be needed to ensure the effective and efficient implementation of homeland security initiatives among the country's 87,900 government jurisdictions.[7] This includes 3,034 county governments, 19,431 municipal governments, 16,506 townships, and 35,356 special districts—which play a role in everything from fighting fires to supplying water.[8] Due to the sheer number of government units in the United States, it will not be easy to orchestrate activities among them.

Kentucky typifies the coordination challenge. It is home to 120 counties, 467 municipalities, 55 health department districts, 126 hospitals, 15 fire rescue districts, 146 water supply districts, 12 state police posts, 14 emergency management areas, 9 natural resource districts, 12 transportation districts, and numerous fire and police departments. Moreover, 48 Kentucky counties—representing 53 percent of the state's population—share a border with 48 other counties in 7 different states. Consequently, planning for or responding to a terrorist incident in Kentucky or a neighboring state would require a coordinated response from a multitude of governmental units and the private sector. As future responsibilities increase, policymakers will be challenged to enhance coordination and cooperation in a political culture that has not always encouraged it.

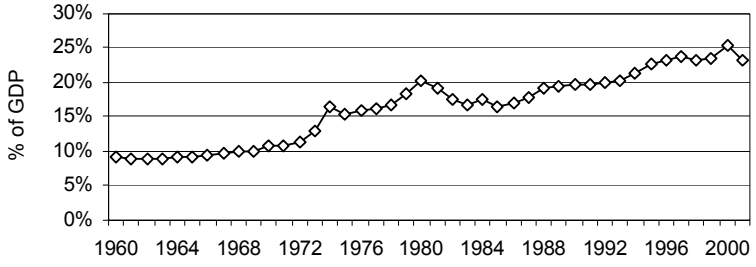
ALTERED ECONOMIC LANDSCAPE

Similar to a devastating earthquake that reorders the landscape—wreaking considerable damage while simultaneously revealing previously undiscovered natural resources—the terrorist attacks have shifted the economic landscape to reveal new economic opportunities. The demand for everything from facial recognition software to a safer smallpox vaccine to certifiably safe food has increased, thereby creating opportunities for the well-positioned entrepreneur.

Mostly, however, the aftershocks of the terrorist attacks jolted the U.S. economy. In the face of long delays at border crossings and ports for people and goods, businesses began questioning the wisdom of "just-in-time" delivery, and business travelers and vacationers stayed close to home. The U.S.-Canadian border became a virtual parking lot, disrupting the daily flow of roughly 500,000 vehicles and $1.4 billion in commerce.[9] Hotel and motel occupancy rates throughout California declined by double digits, as did air traffic volumes.[10] In Florida, where tourism is the largest industry, visitor rates fell by 19 percent in the final quarter of 2001.[11] The Greater Louisville Convention & Visitors Bureau blamed the terrorist attacks as well as a slow economy for a 6.8 percentage point decrease in the hotel-motel occupancy rate from 2000 to 2001.[12] Consequently, lower profits and job losses in the travel and tourism business followed in the wake of the attacks. While many businesses have recovered from the initial shock, some sectors of the economy—like the airline industry—continue to feel the effects. Ultimately, the threat of terrorism could alter the nation's economic landscape across multiple sectors for years.

International Trade and Commerce. The vulnerability of the international trading system to terrorist attack could affect future prospects for global commerce. The value of foreign trade to the U.S. economy has increased steadily over the last 30 years. U.S. trade, which includes exports and imports of both goods and services, is currently equal to about 25 percent of the U.S. gross domestic product and has increased markedly during the last several years (see Figure 1). On a national basis, the exporting of goods (not including services or imports) is equal to about 8

FIGURE 1
U.S. Trade Relative to National Output, 1960-2001



Note: Trade is measured as imports and exports of goods and services.
Source: Author's calculations from US Census Bureau Foreign Trade Division and Bureau of Economic Analysis data

percent of the gross national product. Moreover, in some states this percentage reaches into double digits, led by Vermont (22.3 percent), Washington (14.6 percent), Texas (14 percent), Louisiana (12.2 percent), and Michigan (10.4 percent). Kentucky is 11th at 8.1 percent.[13]

But expanding global trade could be adversely affected in the event of a future terrorist incident involving a weapon of mass destruction concealed inside a conex container. These shed-like containers account for 60 percent of the volume of world trade,[14] and 50 percent of the value of U.S. imports.[15] A recent *New York Times Magazine* article detailed the extent of the threat: "Two thousand containers enter America every hour, on truck and trains and especially on ships sailing into more than 300 American ports,"[16] which translates into around 16 million conex containers each year.[17] Unfortunately, less than 2 percent of these containers are opened and inspected,[18] since (in the words of the Coast Guard Commandant) "slowing the flow long enough to inspect either all or a statistically significant random selection of imports would be economically intolerable."[19]

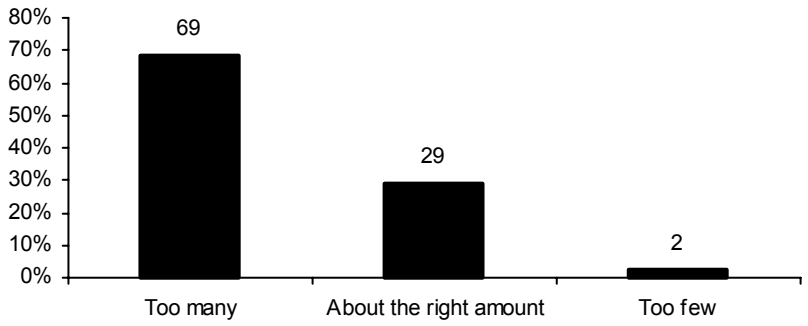
Obviously, such a horrific scenario would irrevocably change the system of global trade and profoundly affect the economies of many states—potentially causing up to $1 trillion in damage and disruption.[20] How big is $1 trillion? It is more than the annual gross product of every state except California, whose gross state product in 2000 was $1.34 trillion. Regardless, in an effort to ensure this scenario never happens, higher security at ports and borders is increasing the cost of goods by an estimated 1 to 3 percent, which some economists believe is sufficient to have a large effect on trade patterns.[21] States with high levels of exports are vulnerable to the vagaries of global trade and should closely monitor the effect that increased security has on future trade patterns. Business decisions on the location of facilities and factories could be affected by the cost and security considerations related to trade, thereby shaping the strategies and incentives used by states to attract and retain businesses.

Immigration. The Bush administration's Homeland Security Budget for 2003 concentrates on four specific policy initiatives, one of which is "securing America's borders."[22] The president has proposed $11 billion for a variety of programs to monitor the border and track the arrival and departure of non-U.S. citizens.[23] While some have challenged the efficacy of tougher border enforcement actions,[24] this new initiative could significantly reduce the flow of illegal immigrants into the United States, a population estimated at between 5 million[25] and 9 million.[26]

Moreover, public opinion toward (legal) immigration has become somewhat more negative since September 11. A Gallup Organization poll conducted before the terrorist attacks (June 2001) revealed that 41 percent felt immigration levels should be decreased compared with 42 percent who would like to maintain the current level.[27] However, a June 2002 Gallup poll found that "49% of Americans believe immigration levels should be decreased, 36% believe they should be kept at their present levels, and 12% think they should be increased."[28] Similarly, 62 percent said that immigration was a good thing for America in June 2001, compared with 52 percent in June 2002.[29] And nearly a year after the attacks 69 percent of Kentuckians believe "too many" immigrants are entering the United States, 29 per-

cent say "about the right amount," and around 2 percent say "too few" (see Figure 2).[30]

FIGURE 2
Post-9/11 Attitudes Among Kentuckians About the Number of Immigrants Entering the U.S., 2002



Source: Kentucky Long-Term Policy Research Center and UK Survey Research Center

A decidedly negative shift in public opinion about immigration or a successful reduction in the number of illegal immigrants could hold long-term implications for the U.S. economy. The U.S. labor market depends upon immigrants for a significant portion of its labor supply; this includes everything from computer programmers to restaurant bus boys to nurses. In fact, during the past decade immigrants accounted for roughly one third of the increase in the size of the workforce,[31] and from 1996 to 2000 the "foreign born constituted nearly half of the net labor force increase."[32] According to Federal Reserve Chairman Alan Greenspan, immigration policy will exercise a considerable influence on the U.S. economy over the long-term.[33] Thus, to the extent that legal and illegal immigration are reduced, states will be challenged to bolster the composition of their workforce by other means, which might require increased funding for adult education and job training programs to enhance their existing labor pool.

Clearly, states and regions with higher levels of immigrants are more likely to be affected by changes in immigration policy (see Tables 1 and 2). Kentucky's immigrant population is relatively small despite its substantial increase in the past decade. Consequently, the effect of changing immigration policy on Kentucky's labor force should be minimal.[34] Nevertheless, several Kentucky employers and farmers have said that "the availability of immigrant workers was key to their ability to continue in business."[35]

Changing Defense Policy and Base Realignment and Closure. Counterterrorism has arguably become the new organizing principle for U.S. foreign and defense

policy, suggesting implications as profound as those resulting from the onset of the Cold War.[36] The Bush Doctrine, which is based on the idea of *preemption,* represents a significant departure from established U.S. military doctrine and will require the transformation of the nation's military force structure. President Bush made these points at the 2002 graduation exercise at West Point: "Our security will require *transforming the military* … a military that must be ready to strike at a moment's notice in any dark corner of the world. And our security will require all Americans … to be ready for *preemptive action* when necessary to defend our liberty and to defend our lives (italics added)."[37] The transformation of military force structure could have implications for base realignment and closure, which will in turn affect state and regional economies.

TABLE 1
Estimated Illegal Immigrant Population for Top Twenty States of Residence, October 1996

All states	5,000,000
1. California	2,000,000
2. Texas	700,000
3. New York	540,000
4. Florida	350,000
5. Illinois	290,000
6. New Jersey	135,000
7. Arizona	115,000
8. Massachusetts	85,000
9. Virginia	55,000
10. Washington	52,000
11. Colorado	45,000
12. Maryland	44,000
13. Michigan	37,000
14. Pennsylvania	37,000
15. New Mexico	37,000
16. Oregon	33,000
17. Georgia	32,000
18. Washington DC	30,000
19. Connecticut	29,000
20. Nevada	24,000
37. Kentucky	6,000
Other	324,000
Source: INS	

TABLE 2
Top Twenty U.S. Metro Areas Compared to Kentucky's Metro Areas, 2002
(% foreign born)

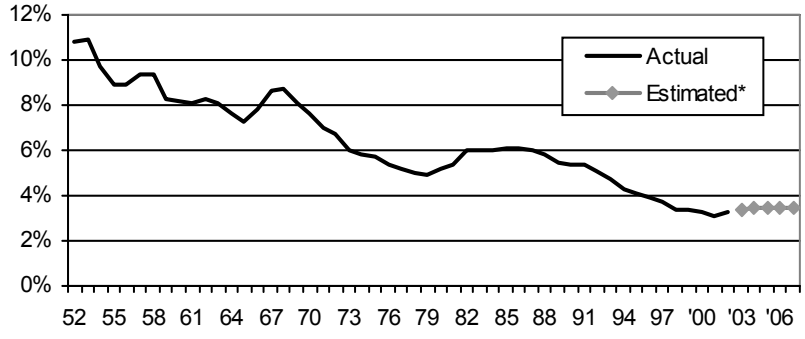
1. Miami, FL PMSA	50.9
2. Jersey City, NJ PMSA	38.5
3. Los Angeles-Long Beach, CA PMSA	36.2
4. San Jose, CA PMSA	34.1
5. New York, NY PMSA	33.7
6. San Francisco, CA PMSA	32.0
7. Orange County, CA PMSA	29.9
8. McAllen-Edinburg-Mission, TX MSA	29.5
9. Laredo, TX MSA	29.9
10. Salinas, CA MSA	29.0
11. El Paso, TX MSA	27.4
12. Bergen-Passaic, NJ PMSA	25.7
13. Brownsville-Harlingen-San Benito, TX MSA	25.6
14. Fort Lauderdale, FL PMSA	25.3
15. Merced, CA MSA	24.8
16. Yuma, AZ MSA	24.0
17. Oakland, CA PMSA	24.0
18. Visalia-Tulare-Porterville, CA MSA	22.6
19. San Diego, CA MSA	21.5
20. Santa Barbara-Santa Maria-Lompoc, CA MSA	21.2
194. Lexington, KY MSA	4.0
203. Clarksville-Hopkinsville, TN-KY MSA	3.7
245. Louisville, KY-IN MSA	2.7
253. Cincinnati, OH-KY-IN MSA	2.6
312. Evansville-Henderson, IN-KY MSA	1.4
327. Owensboro, KY MSA	1.0
331. Huntington-Ashland, WV-KY-OH MSA	0.9
Source: US Census Bureau	

Since the Base Realignment and Closure Act of 1988 (BRAC), which was designed to streamline the military and achieve cost savings, was passed, 97 major closures and 55 major realignments of military installations have taken place.[38] The next round of BRAC is scheduled for 2005, and the Pentagon currently estimates that the nation has between 20 and 25 percent more base capacity than is needed, indicating that more installations will be realigned and closed.[39] A principal factor determining an installation's future will be its homeland defense value. The installations and units best suited for the evolving military doctrine are in the best position to ensure their continued existence.

Military installations are important to states' economies. For example, the military spends about $4 billion in Kentucky each year, mainly due to Fort Campbell and Fort Knox.[40] In Utah, Hill Air Force Base employs more than 20,000 and pumps an estimated $1.8 billion annually into the state's economy,[41] while Fort Stewart "represents a $1.85 billion-dollar annual economic generator" for Georgia.[42] One can cite examples like this for every state. Due to the economic impact these installations have on state and regional economies, policymakers need to pay increased attention to the geopolitical arena and understand how it affects their state's military units and installations.

Lower Economic Growth. Another implication of changing defense policy is the increase in defense and homeland security expenditures. When measured in constant 2002 dollars, the 2003 defense budget will be one of the largest since 1950.[43] However, when measured as a percentage of gross domestic product (GDP), near-term defense budgets are projected to be lower than during the 1980s or 1990s (see Figure 3). Indeed, the Office of Management and Budget projects that defense spending in 2006 will be about 3.3 percent of GDP, which is significantly less than the 1980s average of 5.8 percent or the 1990s average of 4.1 percent.[44] Nonetheless, these projections are based on the assumption that the war on terrorism can be fought without a massive increase in defense spending—an assumption that will be tested if the United States goes to war with Iraq. Preliminary estimates of a war with

FIGURE 3
U.S. Defense Spending as a Percentage of Gross Domestic Product, 1952-2007



*Source: Calculations by the author. *Estimates do not include the cost of a war with Iraq.*

Iraq range from $50 billion to $200 billion, indicating that future defense spending could go even higher.[45] Increased defense spending over the long term lowers economic growth because it diverts resources from more econmically productive uses in the private sector.

Another factor affecting economic growth is the cost of the terrorist attacks to American *business*. Estimated at $151 billion, the cost equals just over half the total earnings of the FORTUNE 100 companies in 2001.[46] This includes $18 billion for workplace security (e.g., more guards and metal detectors), $15 billion for information technology security (e.g., backup systems), $65 billion for logistical changes (e.g., transportation costs, warehouses), $12 billion in additional travel costs (e.g., airport waits), $35 billion for insurance, and $6 billion for employee absenteeism. Since many of these costs are recurring, they can exert sustained downward pressure on the nation's long-term economic growth. According to Richard Berner, Morgan Stanley's chief U.S. economist, the cost over time could be a 0.5 percentage-point reducation in annual growth in domestic output.[47] Economists at the Paris-based Organization for Economic Cooperation and Development have estimated the long-term impact of increased private *and* public spending for security and defense at about 0.7 percent *lower* real gross domestic product.[48] However, some reports indicate that businesses are not allocating huge resources to increased security, either in the form of more guards or better network security.[49] As time passes without a terrorist attack, the sense of urgency about increased security spending will almost certainly wane.

The war on terrorism is unlike any other America has waged. While the Cold War *seemed* permanent, the war on terrorism may well be.[50] Given the nature of the threat—that a handful of people using weapons of mass destruction could inflict horrendous damage—we can never assume the threat is gone. And while the cost of protecting ourselves is high, the cost of not protecting ourselves is clearly higher. Consequently, we have entered a permanent war economy with lasting and somewhat uncertain implications.

ENDURING FOCUS ON PUBLIC FINANCE

The war on terrorism will be expensive for state and local governments. In fact, according to a survey conducted in June 2002 by Deloitte Consulting, Inc., homeland security expenditures by federal, state, and local governments and the private sector could range between $98 billion and $138 billion in 2003,[51] or between $340 and $480 for every American. By comparison, education expenditures, the largest spending category for government, were around $483 billion in 1999 or about $1,780 for every American.[52]

Increased governmental responsibilities and the possibility that economic growth will be lower than otherwise over the long term virtually ensures an enduring focus on public finance. The reason is simple: as the economy goes, so does government revenue. In fact, the Congressional Budget Office (CBO) is forecasting a 60 percent decline in the federal budget surplus from 2003 to 2012, the steepest decline in tax revenue since 1946.[53] While there are many reasons for the declining surplus, economists partially attribute it to a weak economy and increased spending for homeland security.

Meanwhile, state and local governments have their own fiscal problems. According to the National Conference of State Legislatures (NCSL), 43 states reported budget gaps by April 2002 that totaled $37.2 billion by the end of the 2002 fiscal year.[54] And budget shortfalls at the state level are contributing to the financial problems of cities. A recent survey conducted by the National League of Cities (NLC) found that for the first time since 1993 a majority (55 percent) of city finance officers said "their cities are less able to meet their city's financial needs in 2002, compared to 2001."[55] According to NLC President Karen Anderson, mayor of Minnetonka, Minnesota, "Lower sales and tourism tax revenues and higher security spending translates into hard times for cities … it means that in some cities, residents won't be getting the services they deserve because city budgets have been squeezed too tight."[56]

Future Revenue and Expenditure Problems. As barren as the public finance landscape is today, it could get worse in the future. A number of economic and demographic trends indicate that state and local revenue systems might not be adequate in the future. Three vital sources of state and local government general revenue are sales taxes (20 percent), property taxes (17 percent), and income taxes (13 percent).[57] However, individuals are receiving a growing portion of their income from nontaxable sources, consumers are purchasing a larger amount of untaxed services and avoiding the sales (or use) tax through Internet or catalog purchases, and the aging of the population will reduce some state and local tax receipts while increasing some expenditures. Furthermore, Medicaid expenditures, the second largest item in most state budgets, accounts for 20 percent of all state spending and has been increasing annually at a double-digit rate. Medicaid expenditures increased by 11 percent in fiscal year 2001 and 13.4 percent in fiscal year 2002,[58] with CBO projecting an average annual growth rate of 9 percent between 2001 and 2012.[59] All of this has led one analyst to conclude, "State finances will be constrained quite tightly over the next several years even if the economy recovers nicely from the current recession."[60] Consequently, it is likely that the cacophony for reforming or modernizing antiquated revenue systems will grow louder in the future.

Volatile Receipts. In addition to future receipts possibly being lower than expected, they could also be much more volatile. The war on terrorism will be ongoing, episodic, and unpredictable. The one thing markets hate more than anything is *uncertainty*, and war creates a lot of uncertainty. Since the late 1990s, the direct relationship between the direction of the stock market, for example, and government receipts has become more apparent.[61] Consequently, the states' somewhat depleted budget reserve trust funds (i.e., rainy day accounts) will be needed to help moderate future revenue volatility. Yet, aggregate state budget reserves could decrease to $13.2 billion this year, a significant drop from the $31.5 billion reported two years ago.[62]

Increased Competition for Federal Dollars. State and local governments depend upon the federal government for direct or indirect funding of an array of programs ranging from health care to education to transportation to prisons. Nationally, federal transfers account for about one fifth (18.9 percent in 1999) of the general revenue that finances state and local government spending—Kentucky is at 22.7 percent. In some states federal transfers account for over one quarter of general

revenue, led by Montana and North Dakota (28.1 percent), Wyoming (26.7 percent), South Dakota (26 percent), West Virginia (25.5 percent), Tennessee (25.3 percent), and Vermont (25.3 percent).[63] However, at the 2002 National Governors Association summer meeting, the governors appealed to the federal government for additional funding to defray Medicaid costs. A Bush administration official present at the meeting told them to "look elsewhere for funding help."[64] State and local governments are likely to hear this response with increasing regularity due to greater competition for federal dollars. Defense and homeland security expenditures are rising to high levels and could go higher. Both major political parties have proposed Medicare prescription drug benefits that could cost between $370 to $500 billion over the next decade. And in less than 10 years Baby Boomers will begin retiring, which will put enormous fiscal pressure on both Medicare and Social Security.

The prophetic words spoken in November 2000 by Dr. C. Eugene Steuerle, an economist with the Urban Institute, have increased resonance today in our changed world: "There will be extraordinary pressure upon states and localities to self-finance much of what they want to do in the near future."[65] The war on terrorism will be expensive, and the future revenue situation for most states and many local governments is bleak. Consequently, the pressure to modernize revenue systems or make difficult choices about spending priorities will increase.

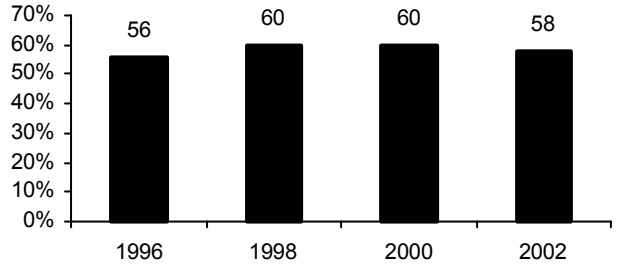
RISING RELEVANCE FOR CIVIC ENGAGEMENT

In an era of fiscal constraint, it is likely that governments will look increasingly to community-based organizations, nonprofits, businesses, and citizens to forge partnerships and relationships to meet new challenges. Indeed, this is already beginning to happen. The Bush administration, for example, has created an organizing framework to marshal volunteers in homeland security efforts. The initiative, Citizen Corps, is described as "a local, community-based initiative to have every American become active participants in the homeland security effort …"[66] Of the numerous programs organized under the Citizen Corps, the Neighborhood Watch Program is probably the best known. Other programs include Community Emergency Response Teams, Volunteers in Police Service, and the Medical Reserve Corps. The citizen volunteers in these programs serve as low-cost extensions to state and local government personnel. As such, these programs allow government to do more with less by encouraging active civic engagement.

Around 60 percent of Kentucky adults volunteer (see Figure 4),[67] which is higher than the U.S. average of about 44 percent.[68] However, some evidence suggests that the citizenry is responding to the call for additional civic engagement. Independent Sector conducted a survey on giving and volunteering in response to the events on September 11, and found that "70 percent of people donated time, money, or blood to a charity or nonprofit organization in the four weeks after the terrorist attacks."[69] A public opinion survey conducted in Kentucky during July and August 2002 shows that a significant percentage (30 percent) expressed an increased likelihood of attending meetings of nonprofit, charitable, civic, or community groups since the terrorist attacks.[70] However, it is debatable whether the renewed sense of community will endure. The challenge for policymakers and other community leaders will

be to build on this rejuvenated sense of civic engagement and to facilitate broad-based community involvement in other issue areas besides public safety and homeland security.

FIGURE 4
Percent of Kentuckians Who Volunteer for Community Activities



Source: Kentucky Long-Term Policy Research Center and UK Survey Research Center

There are good reasons for enhancing a community's stock of social capital or civic engagement. Studies have shown a link between participation in civil society and higher levels of prosperity and higher achievement in schools.[71] Brookings Institution researchers Jeffrey Berry, Kent Portney, and Ken Thomson argue that increased citizen participation not only positively affects citizens' perceptions of the communities they live in, but it also increases the legitimacy and enhances the status of governmental institutions.[72] Civil society can also tackle problems such as poverty, illiteracy, and drug abuse that government and the market have failed to eradicate. Some research even suggests that members of communities with strong civil societies enjoy better health and live longer.[73] In the succinct words of Harvard political scientist Robert Putnam, "An impressive and growing body of research suggests that civic connections help make us healthy, wealthy, and wise."[74]

Mounting responsibilities for state and local governments coupled with constrained resources portends rising relevance for civic engagement. Stronger social capital will not only allow government to do more with less, but will also strengthen the ties that bind us in the changed world ahead.

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[1] Cost estimates of the terrorists' attacks vary. The Organization for Economic Cooperation and Development (OECD) concluded, "The destruction of physical assets was estimated in the national accounts to amount to $14 billion for private businesses, $1.5 billion for state and local government enterprises and $0.7 billion for Federal Government. Rescue, cleanup and related costs have been estimated to amount to at least $11 billion." Moreover, insurance losses "are estimated at between $30 billion and $58 billion…" See "Economic Consequences of Terrorism," *OECD Economic Outlook 71,* (Paris: Organization for Economic Cooperation and Development, June 2002), 18 July 2002 <http://www.oecd.org>. The U.S. General Accounting Office (GAO) reviewed several studies on the economic impact of the September 11 terrorist attack on the Twin Towers, and concluded that the most comprehensive estimate of the total losses of the two World Trade Center buildings was $83 billion (in 2001 dollars); this includes both direct and indirect costs. Refer to GAO, *Review of Studies of the Economic Impact of the September 11, 2001, Terrorist Attacks on the World Trade Center*, GAO-02-700R, 29 May 2002, 1 June 2002 <http://www.gao.gov>.

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[61] See, for example, "The Growing Role of the Stock Market in Federal Receipts," Summary, Mid-Session Review, Budget of the United States Government, Fiscal Year 2003, Office of Management and Budget, 15 July 2002, 5 Sept. 2002 <http://www.whitehouse.gov/omb/budget/fy2003/msr02.html>.
[62] Russell Gold and Robert Gavin, "Fiscal Crises Force States to Endure Painful Choices," *Wall Street Journal* 7 Oct. 2002.
[63] These percentages were derived by the author using data from the U.S. Census Bureau, 2 Feb. 2002 <http://www.census.gov/govs/estimate/99stlss1.xls> and <http://…/99stlss2.xls>.
[64] Jason White, "Govs Struggle to Contain Healthcare Costs," 17 July 2002, 18 July 2002 <http://www.stateline.org/story.do?storyId=249171>.
[65] C. Eugene Steuerle, untitled speech, Kentucky Long-Term Policy Research Center Annual Conference, "Challenges for the Next Century," Covington, Kentucky, 14 Nov. 2000.
[66] Citizen Corps Web site <http://www.citizencorps.gov/>.
[67] University of Kentucky Survey Research Center, various surveys. The question is: *In the past 12 months have you volunteered your time for civic, community, charitable or nonprofit activities or church related activities?*
[68] Independent Sector Web site, 4 Nov. 2001, 6 Nov. 2002 <http://www.independentsector.org/PDFs/GV01keyfind.pdf>.
[69] Independent Sector, 7 Oct. 2002 <http://www.independentsector.org/media/GV01PR.html>.
[70] This is based on a sample of about 867 adults. The survey was conducted by the University of Kentucky Survey Research Center.
[71] For example, see Robert D. Putnam, "The Prosperous Community: Social Capital and Public Life," *The American Prospect* Spring 1993. Also, Jay Braatz and Robert D. Putnam, "Community-Based Social Capital and Educational Performance: Exploring New Evidence," unpublished draft, 1998.
[72] Jeffrey Berry, Kent Portney, and Ken Thomson, *The Rebirth of Urban Democracy* (Washington: Brookings Institution, 1993).
[73] See Ichiro Kawachi and Bruce P. Kennedy, "Long Live Community: Social Capital as Public Health," *The American Prospect* Nov.-Dec. 1997. Also, Carolyn R. Shaffer, Kristen Anundsen, & M. Scott Peck, *Creating Community Anywhere: Finding Support and Connection in a Fragmented World* (New York: Perigree, 1993).
[74] Robert Putnam, *Bowling Alone: The Collapse and Revival of American Community* (New York: Simon & Schuster: 2000) 287.

GLOBALIZATION IN A POST-9/11 WORLD

UNCERTAIN IMPLICATIONS FOR KENTUCKY

By Amy L. Watts
Kentucky Long-Term Policy Research Center

The prosperity of the 1990s and the tragedy of the September 11 attacks reflect the dual nature of globalization. Expanded integration of international economies fosters economic growth among nations, but this same openness heightens vulnerability to attacks such as those of September 11. This duality forces the nation and its states to make tough choices and compromises in the way they do business in the new, post-9/11 world economy. Avid supporters of globalization's increasingly close economic ties among countries, including trade, travel, immigration, information shared over the Internet, increased investment in foreign countries, and an accelerated pace of technological advance, praise the benefits such ties afford its participants. Expansion of economic freedom through globalization spurs competition, which in turn raises productivity and living standards in countries that open themselves to the global market. However, some consequences of globalization, such as environmental degradation, health crises, and the loss of lower-skilled jobs, which Kentucky has experienced, engender feelings ranging from disillusionment to violent animosity among its opponents. Ironically, the same forces that helped fuel this growth and prosperity—the Internet, global financial networks, and commercial aviation—were the very ones that also allowed the terrorists to wreak havoc on our homeland. In this world of uncertainty, one thing is certain: globalization will never be what it once was. As Dr. Bruce Hoffman stated in his 2002 interview with the online magazine, *Fathom*:

> *One of the lessons learned from the September 11 attacks is that we cannot participate in and enjoy the advantages of an increasingly globalized and interconnected world and economy while isolating ourselves and our citizens from the enemies of this system.*[75]

Because of this new reality, the world must now deal with the backlash against an increasingly globalized society and the associated costs.

The extent to which Kentucky is affected by this new system of globalization depends upon how much the state has become globally interconnected. Many measures indicate that Kentucky has a significant role in the global economy. Just as the state has benefited greatly from foreign trade and investment, it may also suffer the consequences of the darker side of global participation. The economic disruption caused by increasing uncertainty in global relations and the resultant costs associated with security measures, among other things, may threaten the economic growth resulting from Kentucky's international relationships.

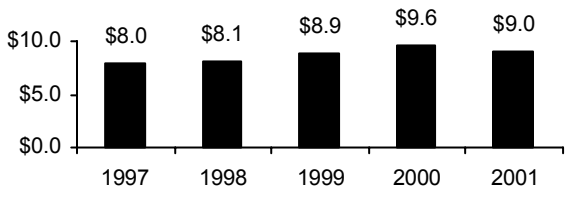
GLOBALIZATION IN KENTUCKY

The global ties of a state's businesses will determine the winners in the 21st century economy. Several measures indicate Kentucky's strong presence globally, including its international trade and foreign-direct investment, which in turn demonstrate the state's reliance on these close international ties. In addition, Kentucky businesses are becoming increasingly aware of how important it is to be able to compete internationally. In 2002, the Progressive Policy Institute (PPI) ranked the states based upon their integration in the global community. The institute scored the states on globalization using two measures: 1) the extent to which the state's manufacturing workforce is employed producing goods for export, and 2) the share of the workforce employed by foreign-owned companies. By these two indicators, Kentucky scored a 10.49 in the globalization part of the PPI's New Economy Index, which earned it a rank of 18 among the states. This ranking illustrates Kentucky's relatively high vulnerability to disruptions in the global economy.[76]

INTERNATIONAL TRADE AND FOREIGN-DIRECT INVESTMENT

Kentucky has benefited from globalization through a rising export market and the investment of significant foreign capital. The value of Kentucky exports rose by 20 percent between 1997 and 2000. Although recent estimates show a drop in the value from $9.6 billion in 2000 to $9.0 billion in 2001, this figure remains higher than that found at the height of the economic expansion of the 1990s (see Figure 5). Manufacturing exports accounted for approximately 94 percent of the state's 2000 exports, highlighting the relative importance of the manufacturing sector in the state. These increases helped Kentucky's gradual rise in the rankings of states measured by the value of their exports (see Table 3). Ris-

FIGURE 5
Value of Kentucky Exports
(in current billions)



Source: Kentucky Cabinet for Economic Development

ing exports have helped Kentucky-based firms stay competitive and increase profitability and market strength. In turn, the economic position of communities and families that rely upon them has been strengthened.

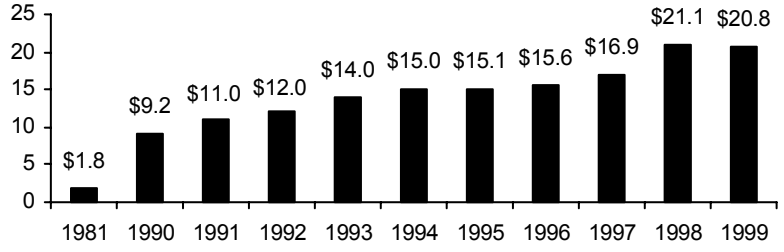
TABLE 3
Kentucky's National Ranking in Exports, 1993-1999

Year	Rank
1993	25
1994	25
1995	24
1996	23
1997	22
1998	22
1999	22
2000	22

Source: US Census Bureau and Kentucky Cabinet for Economic Development

Workers in Kentucky benefit greatly from foreign affiliates, which have created thousands of jobs across the South and the nation. Figure 6 shows the rising amount of foreign-direct investment in Kentucky. Indeed, investments by foreign affiliates in the state have increased almost twelvefold since the early 1980s. In addition, these jobs, on average, tend to pay more than those created by domestic businesses. Figure 7 shows how the percent of Kentucky's employment due to the presence of foreign affiliates has changed since 1980. At that time, less than 2 percent of Kentucky's workers were employed by foreign affiliates. We also lagged the nation in this indicator. By 1999, the state had increased to 5.7 percent, surpassing the nation's 4.7 percent. While many of these new firms are branch plants that make their most significant economic contributions to cities and regions that host their U.S. headquarters and are subject to move again, their presence has improved the economic circumstances of many families in the Commonwealth.

FIGURE 6
Foreign-Direct Investment in Kentucky
(in current billions)

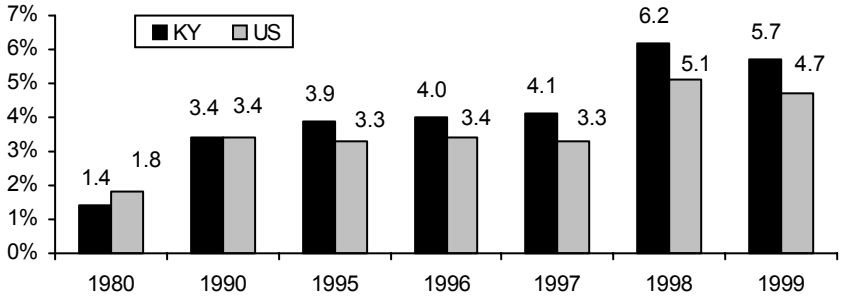


Sources: Statistical Abstract of the United States, 1998; US Department of Commerce; Statistical Abstract of the United States, 2000; and the Kentucky Cabinet for Economic Development

ISO 9000 COMPANIES

The number of ISO 9000 registered companies in Kentucky indicates that a substantial portion of Kentucky's firms are fully prepared to participate in the global economy and thus remain sufficiently competitive, profitable, and ideally, a

FIGURE 7
Foreign Affiliate Employment as a Percent of Total Employment, Kentucky and the U.S., Selected Years

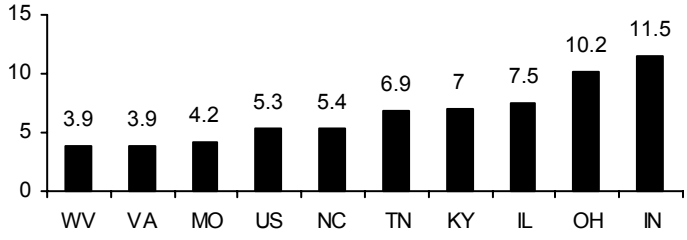


Source: Kentucky Cabinet for Economic Development

long-term presence in the state. Formed in Switzerland in 1947 to establish internationally shared and recognized business standards, the International Organization for Standardization crafted the ISO 9000, a set of standards for quality business management designed to encourage international commerce.[77] Businesses that receive ISO 9000 certification demonstrate to their customers and suppliers that they meet these rigorous standards, widening their opportunities to participate in the global marketplace. As such, ISO 9000 companies stand better chances of profitability and longevity than their noncertified competitors.[78]

Just as ISO 9000 certification offers an indicator of quality business operations, the presence of ISO 9000 companies suggests a given region's readiness to do business at the international level. Compared with surrounding states, Kentucky fares better than most in terms of the number of ISO 9000 registered businesses per 1,000 firms and surpasses the nation in this measure (see Figure 8).[79] Since 1992,

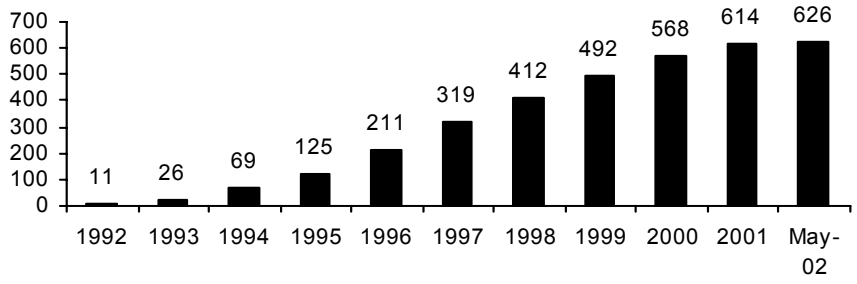
FIGURE 8
ISO 9000 Registered Businesses per 1,000 Firms, 2002



Source: Kentucky Long-Term Policy Research Center and QSU Publishing Co.

the number of firms in Kentucky to become ISO 9000 registered firms rose from 11 to 626, reflecting the increasingly international nature of the current marketplace (see Figure 9). Kentucky's businesses have not only placed high levels of importance on meeting international guidelines over the past decade, but also the state stands out in this area relative to contiguous states and the nation.

FIGURE 9
Number of Registered ISO 9000 Companies in Kentucky, 1992-May 2002



Source: Kentucky Long-Term Policy Research Center and QSU Publishing Co.

CONCLUSION

How the events of 9/11 and the ensuing reactions will affect globalization in Kentucky remains to be seen. However, by many measures the state has become highly integrated in the global community. Kentucky relies upon foreign investment to provide capital and jobs to many local communities. As the value of exports has grown over the years, so has the state's reliance on this endeavor as a source of economic growth. In addition, many Kentucky firms have increased their quality standards with an eye to increasing their international competitiveness. While Kentucky may not have been directly affected by the terrorist attacks on September 11, the long-term consequences of those tragic events may yet affect our state and its global economic endeavors.

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[75] *Fathom* (www.fathom.com), reprinted in Kentucky Long-Term Policy Research Center, "RAND's Bruce Hoffman on the Implications for a Post-9/11 World," *Foresight* (2002) 9.3: 8-9.

[76] Progressive Policy Institute (PPI), "The 2002 State New Economy Index: Globalization," PPI Web site, 3 Dec. 2002 <www.neweconomyindex.org/state/2002/02_globalization_01.html>.

[77] Praxiom Research Group Limited, "ISO 9000 Translated into Plain English" Praxiom Web site, undated, 25 Nov. 2002 <http://www.praxiom.com/iso-intro.htm>.

[78] It should be noted that because ISO 9000 certification is such an involved, complicated process, some businesses opt to meet ISO 9000 guidelines without going through the formal certification procedure. Thus, a company can meet ISO 9000 requirements but not actually be certified.

[79] *ISO 9000 Registered Company Directory, North America*, CD-ROM, QSU Publishing Company, Fairfax, VA (2002) 5.2, and U.S. Census Bureau, *County Business Patterns*, *2000*, U.S. Census Bureau Web site, 3 Dec. 2002 <www.census.gov/epcd/cbp/view/cbpview.html>.

RISING PROSPERITY DESPITE DISPARITIES

INCOME AND POVERTY TRENDS IN KENTUCKY

By Amy L. Watts
Kentucky Long-Term Policy Research Center

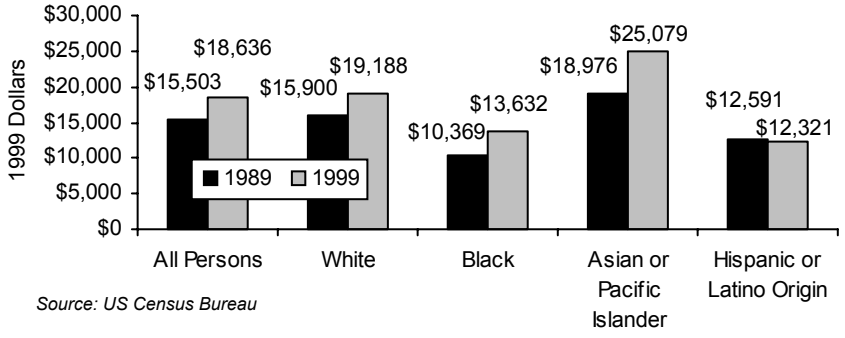
The 1990s saw unprecedented economic expansion when incomes rose, poverty declined, and many prospered. With lower incomes and higher poverty rates than the national averages, Kentucky began the decade behind the rest of the nation, making the economic growth particularly crucial to the state's welfare. According to the most recent 2000 Census data on income and poverty, the economic prosperity of the past decade benefited the state. Per capita income rose for most groups of Kentuckians, and poverty levels fell. Unfortunately these changes were not large enough to close the gaps between Kentucky and the United States. Kentucky still lags the nation in several income and poverty indicators despite the economic boom of the 1990s. And as the boom wanes, it will become increasingly difficult for Kentucky to gain on the national averages.

INCOME TRENDS 1990-2000

According to estimates from the U.S. Census Bureau, per capita income for the state rose 20 percent over the 1990s. Figure 10 shows per capita income for Kentucky in constant 1999 dollars for 1989 and 1999 by race and ethnicity. Per capita income for all Kentuckians rose from $15,503 in 1989 to $18,636 in 1999.[80] Furthermore, per capita income rose for all races shown (but not for all ethnic groups shown). The per capita income for white Kentuckians rose 21 percent over this period. For blacks and Asians or Pacific Islanders in Kentucky per capita income increased by 31 and 32 percent, respectively. However, black Kentuckians had a much lower per capita income in 1989 than whites or Asians and therefore needed to increase by much more than it did to reach the state average. Unfortunately,

Kentucky's Hispanic population did not fare as well, as its members saw their real per capita income fall over the decade. These data are telling, both in showing how far Kentucky has come and in how far certain groups still have to go.

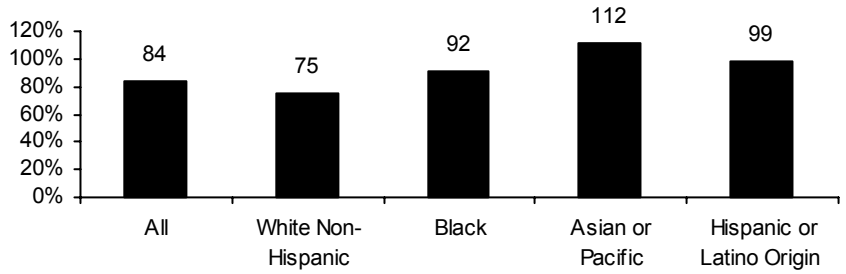
FIGURE 10
Per Capita Income in Kentucky, by Race and Ethnicity, 1989 and 1999



Source: US Census Bureau

In addition, Kentucky's per capita income was 77 percent of U.S. per capita income in 1989 and continued to lag the national average at 84 percent in 1999 (see Figure 11). In Figure 11, we show per capita income for each racial and ethnic group in Kentucky compared with its national counterparts. White non-Hispanic Kentuckians are doing the worst relative to their counterparts with a per capita income 75 percent of the U.S. average. Asians or Pacific Islanders in Kentucky are doing better than those nationally, with a higher per capita income on average. Black Kentuckians lag black Americans slightly with a per capita income 91 percent of the U.S. average, and Hispanic or Latino Kentuckians are doing almost as well as those nationally with a per capita income 99 percent of the national average.

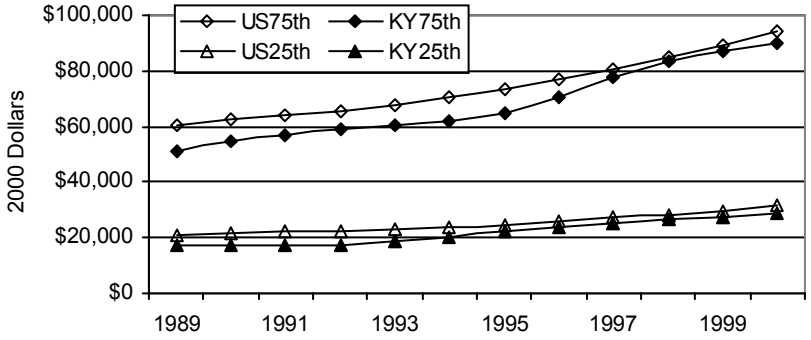
FIGURE 11
Kentucky Per Capita Income as a Percent of U.S., by Race and Ethnicity, 1999



Source: US Census Bureau

Many Kentucky families also fared well throughout the 1990s because of rising incomes. Incomes rose for lower middle-class (25th percentile family income) and upper middle-class (75th percentile family income) families in both Kentucky and the United Stated from 1989 to 2000 (see Figure 12).[81] These data show a 70 percent increase in family income at the 25th percentile in Kentucky compared with a 76 percent increase for 75th percentile family income. U.S. income at these levels increased by 50 and 56 percent, respectively. For a family to fall into the 25th percentile level in Kentucky in 1989 it would have an income of approximately $17,039 compared with $29,046 a decade later. Families at the 75th percentile in Kentucky in 1989 had an income of at least $51,237 compared with $90,109 by the end of the decade. Nationally, they fall behind the 25th percentile income of $31,857 and the 75th percentile income of $94,367 in 2000, respectively. So, at these points on the family income spectrum, incomes are rising, hopefully along with quality of life, and Kentucky is not as far behind the nation as it once was. With 75th percentile family income approximately triple 25th percentile family income for both Kentucky and the nation, the gap remains much larger than it was in the late 1970s and while it is not expanding, there are no signs of its decline, either.

FIGURE 12
Family Income at the 25th and 75th Percentile Levels for the U.S. and Kentucky, 1989-2001
(3-year moving averages)



Source: US Census Bureau

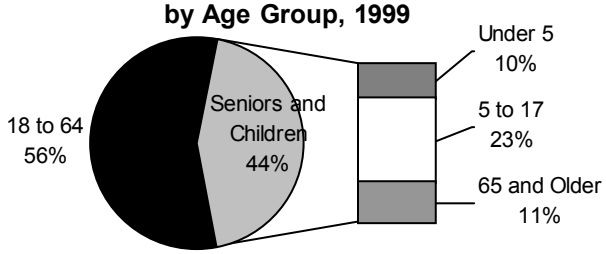
POVERTY TRENDS 1990-2000

Poverty is hard to measure, primarily because it is difficult to determine what constitutes being "poor." The U.S. Census Bureau defines a family of four with two related children under 18 years old as poor if its yearly family income is $17,960 or below. Adjusted for senior citizen status and family size, these thresholds have remained fairly constant since their introduction in the 1960s. Their only changes reflect yearly changes in price levels as measured by the Consumer Price Index. Poverty is determined by comparing pretax cash family income with the poverty

threshold. According to the official poverty measures, in 1999, using 2000 Census data, 15.8 percent of Kentuckians lived in poverty compared with 12.4 percent nationally. Approximately 33.8 million Americans, of whom 621,096 were Kentuckians, lived in poverty in 1999.

The poverty rate represents an average over the entire population and does not really tell us who, in particular, is well off or who is worse off. That determination requires an analysis of poverty levels for particular groups. Figure 13 shows the demographic breakdown of poor Kentuckians by age, while Figure 14 shows how poverty rates vary overall and among each of these groups by race and ethnicity. Almost half of all poor Kentuckians are children or seniors. Proportionately more black and Hispanic Kentuckians live in poverty than white non-Hispanic Kentuckians. This is true for seniors, children, and the remaining population, which is comprised of working-age adults and approximately 5,000 unrelated children. With a

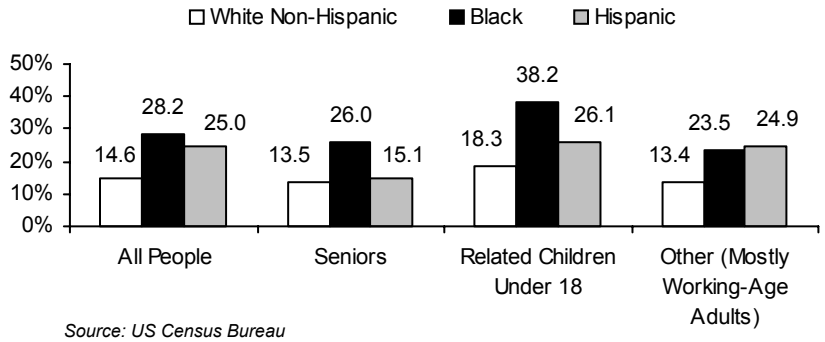
FIGURE 13
Poverty in Kentucky, by Age Group, 1999



621,096 Kentuckians Below Poverty Level

Source: US Census Bureau

FIGURE 14
Poverty Rates for Kentuckians, by Age Group and Race and Ethnicity, 1999



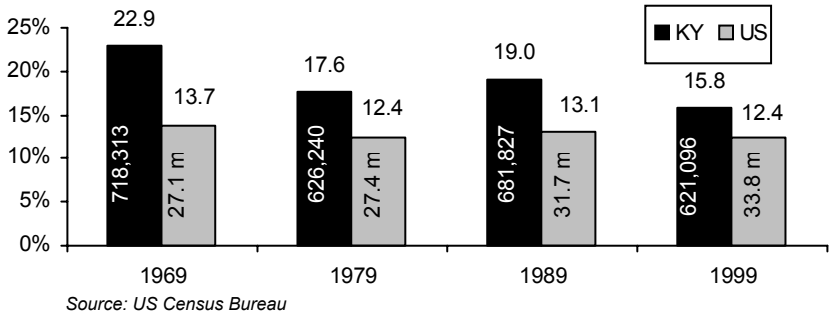
Source: US Census Bureau

poverty rate almost twice that of white non-Hispanic Kentuckians, 28.2 percent of black Kentuckians are poor, while approximately a quarter of Kentuckians of Hispanic origin live in poverty. Black seniors are worse off than white non-Hispanic and Hispanic seniors in Kentucky. The proportion of black children who live in poverty is greater than twice the proportion of white non-Hispanic children and 46 percent greater than the percent of poor Hispanic children. Although black children represent only 8.8 percent of the child population in the state, they represent 16.4 percent of those children who live in poverty. Also, the poverty rates for working-age (18 to 64) blacks and Hispanics are almost double that of white non-Hispanics.

CHANGES IN POPULATION POVERTY OVER TIME

Since the late 1960s, poverty rates and the number of those living in poverty have changed, for the better in most cases, for both Kentucky and the nation. Figure 15 uses data from the censuses taken every ten years by the U.S. Census Bureau since 1970 to show how poverty rates have changed. The decennial census asks respondents about the previous year's income; therefore each point in time shows the poverty rates for the year before the census took place. In the late 1960s, the overall poverty rate for individuals in the United States was 13.7 percent, representing 27.1 million people, of whom 718,313 were Kentuckians, or 22.9 percent of the Kentucky population. The national estimate of population poverty has remained relatively stable in each of the four "snapshots" taken over the past 40 years compared to slightly more erratic changes occurring in Kentucky, with the state's poverty rate exceeding that of the nation's by a substantial margin at each of the four points in time shown.

FIGURE 15
Percentage and Number of Persons Living in Poverty, Kentucky and the U.S., 1969, 1979, 1989, and 1999



Source: US Census Bureau

Fortunately, the overall trend has been one of fewer people living in poverty, although the rate increased slightly in 1989. In 1969 almost a quarter of Kentuckians lived in poverty, but this rate had declined as of the last decennial census and fewer than 1 in 6 were poor in 1999. While fewer Kentuckians lived in poverty in 1999 than in 1969, our poverty rate continues to exceed that of the nation's. Al-

though the national poverty rate has declined to its pre-1980s level, the number of those living in poverty nationally is the highest it has been in the last four censuses.

Poverty rates for seniors, children, and working-age adults declined or remained relatively unchanged for both Kentucky and the United States from 1989 to 1999 (see Table 4). At both levels, the well-being of seniors rose as more moved out of poverty and the number of those living above the poverty level increased. However, with a poverty rate of 16.7 percent, senior women are relatively worse off than senior men, whose poverty rate was 10.5 percent in 1999. The number of poor children in Kentucky declined while the number living above the poverty line increased. Nationally, the number of children living above and below poverty increased, although the number of poor children increased proportionately less than the increase in those above poverty. Many more working-age adults increased the ranks of those living above the poverty line at both the state and national levels. However, while those living below poverty declined in Kentucky, the number of poor working-age adults in the United States increased by proportionately more than the increase in their counterparts who were not poor, resulting in a slight increase in the poverty rate for this population at the national level. Despite the Commonwealth's progress in reducing the percentage of its citizens living in poverty, its rates continue to exceed the nation's for each of the populations analyzed. So, while more Kentuckians have been able to lift themselves out of poverty, these advances have not been great enough to close the persistent gaps separating the state from the rest of the country in terms of economic well-being.

FAMILY POVERTY

The threshold incomes used to establish poverty rates are based on family income, and the data reveal variations in poverty rates of families by family type. Families are generally categorized by the age (i.e., senior or nonsenior), gender, and marital status of the head of the family and the presence of related children under the age of 18. In 1999, 12.7 percent of all Kentucky families were poor. Of the 140,519 poor Kentucky families, 101,463 had related children under 18 years old (see Figure 16). Of the families with related children under 18 years old, 18 percent were poor in 1999. Approximately 52 percent of poor families with related children were headed by a single female, although this family type accounts for only 22 percent of all Kentucky families with related children under 18 years old.

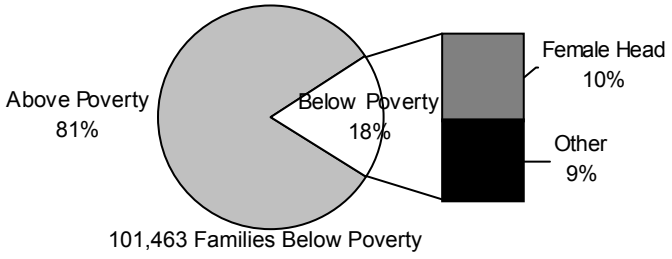
Family poverty rates also vary by race and ethnicity of the head of the family. Figure 17 shows the percent of families with related children under 18 years old living in poverty in Kentucky by family type and by race and ethnicity of the head of the family. Black and Hispanic families are worse off than white non-Hispanic families, in general. Families headed by a single female are worse off with respect to poverty, regardless of race or ethnicity. Almost half of all black families headed by a single female are poor. Although the rates for white non-Hispanic and Hispanic single female-headed families are lower, they follow closely at approximately 41 percent. These numbers indicate the dire economic situation in which Kentucky's single mothers increasingly find themselves (see Table 4).

TABLE 4
Poverty in Kentucky and the United States, 1989-1999

	Poverty Rate			Number Below Poverty			Number Above Poverty		
			Change from		Change from 1989			Change from 1989	
	1989	1999	1989	1999	Number	%	1999	Number	%
KENTUCKY									
Persons									
Elderly	20.60%	14.20%	-31.10%	67,477	-23,614	-25.9	407,713	56,919	16.2
Related Children Under 18	24.5	20.4	-16.7	197,794	-31,736	-13.8	773,693	65,498	9.2
Other (mostly working-age adults)	16.4	14.3	-12.8	355,825	-5,381	-1.5	2,126,453	285,410	15.5
Families with Related Children Under 18									
Female-Headed With No Spouse	51.8	42.7	-17.6	53,320	1,801	3.5	71,551	23,667	49.4
Other (mostly Married Couple)	14.4	11.1	-23.3	48,143	-14,754	-23.5	387,995	14,731	3.9
UNITED STATES									
Persons									
Elderly	12.8	9.9	-22.7	3,287,774	-492,811	-13	29,922,064	4,140,002	16.1
Related Children Under 18	17.9	16.1	-9.8	11,386,031	224,195	2	59,119,684	8,002,865	15.7
Other (mostly working-age adults)	11.2	11.3	1	19,226,007	2,425,564	14.4	150,725,697	17,389,583	13
Families with Related Children Under 18									
Female-Headed With No Spouse	42.3	34.3	-18.9	2,940,459	73,518	2.6	5,632,308	1,716,094	43.8
Other (mostly Married Couple)	7.9	7.6	-4.4	2,215,407	89,503	4.2	27,122,606	2,495,005	10.1

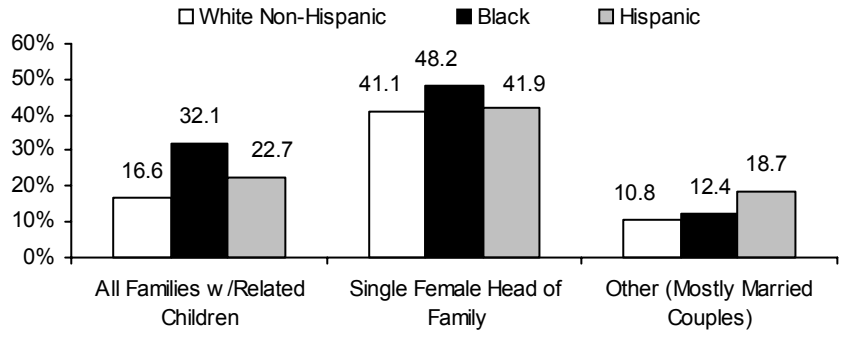
Source: US Census Bureau

FIGURE 16
Poverty Rate of Kentucky Families with Children Under Age 18, 1999



Source: US Census Bureau

FIGURE 17
Poverty Rate of Kentucky Families with Children by Type, Race, and Ethnicity of Family Head, 1999



Source: US Census Bureau

Table 4 shows changes in the number of families above and below poverty for Kentucky and the United States since 1989. Families with related children under 18 headed by a single female increased for both Kentucky and the nation. Fortunately, the number above poverty increased by more than the number below poverty, bringing down the overall rates, but a substantial proportion remain in poverty. The rates for the remaining families also declined. For Kentucky there are fewer of the "other" family type, which consists primarily of married couple families, than there were before the decade began. The number below poverty decreased by slightly more than the number above poverty increased, which reduced the poverty rate for this family type but also reduced the number of this family type living in the state. Nationally, the number of these types of families living above and below poverty increased, which resulted in a slight decline in the poverty rate for this family type. The number of families with children living below poverty declined overall for

both Kentucky and the United States, which led to lower poverty rates by the end of the decade. However, as single female-headed families with related children become more prevalent, more children are at risk of living in poverty.

CONCLUSION

Kentucky prospered throughout the past decade in the form of higher per capita income and lower poverty rates, but the persistent gaps between the state and the nation remain. While many in the state prospered, the extent of the benefits realized were not, in most cases, great enough to lift the state to the national standards to which it aspires. There are many positive changes that Kentuckians may take comfort in, but many aspects of income and poverty still require attention—especially in light of the sagging economy and the fact that many of the opportunities afforded by the past decade have faded away.

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[80] According to the Bureau of Economic Analysis (BEA), Kentucky's personal per capita income was $24,085 or 81.3 percent of the nation's in 1999. The BEA incorporates many different data sources in its estimates of personal income, which are also revised periodically as new data becomes available. This difference in source data between the BEA and the U.S. Census Bureau contributes to the differences in estimates of personal per capita income from the two agencies.

[81] For a general overview of the methodology used to estimate these incomes, please refer to "Appendix A" in Michal Smith-Mello, Michael T. Childress, Amy L. Watts, and John F. Watkins, *Challenges for the New Century* (Frankfort: Kentucky Long-Term Policy Research Center, 2000) 109-111. For an updated methodological description of this particular analysis, please refer to <www.kltprc.net/books/2002trends/Chpt_3Append.pdf>.

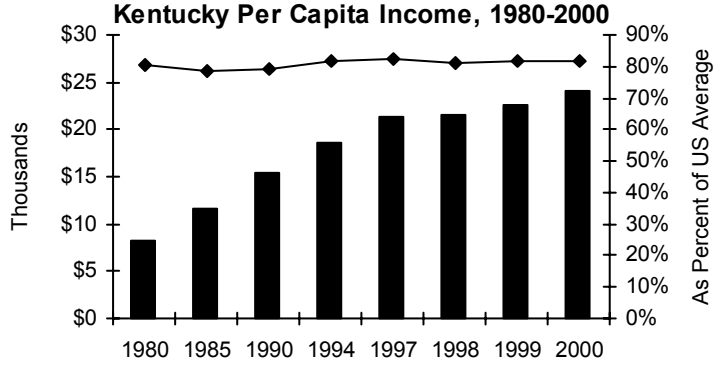
STILL LEFT BEHIND

KENTUCKY PER CAPITA INCOME TRENDS

By Eric Scorsone
Department of Agricultural Economics
University of Kentucky

By 2000, per capita income in Kentucky had reached 82 percent of the national average, compared with 73 percent in 1958. The state ranked 40th nationally; in 1958, it ranked 43rd.[82] As shown in Figure 18, per capita income has risen steadily over the past two decades, but it has made only slow gains toward the national average.

FIGURE 18
Kentucky Per Capita Income, 1980-2000



Source: Kentucky Cabinet for Economic Development

Kentucky's per capita income, however, may be closer to the national average than these data suggest. Some argue that cost-of-living differences between states could make similar incomes unequal. In addition, there may be differences in quality of life, as measured by environmental quality, civic health, crime, and other such factors that would also inhibit complete convergence of incomes across states. A

recent study by Berger and Blomquist found that after making cost-of-living and quality-of-life adjustments to Kentucky's 1998 per capita income, its percentage of the national average increased from 81 percent to 88 percent.[83]

THE RURAL-URBAN INCOME GAP

The past 10 years have witnessed both improvements and declines in the rural-urban wage, income, and employment gaps. As Table 5 shows, rural Kentucky

TABLE 5
Basic Economic Trends for Rural Kentucky, 1990-1999

	Avg. Earnings per Job Change	Per Capita Net Earning Change	Employment Growth	Per Capita Income Change	Per Capita Retirement Income Change
Urban US	41.1%	46.5%	17.5%	50.1%	58.9%
Rural US	33.9	41.6	17.3	45	62.7
Urban KY	39.8	50	22.7	51.9	60
Rural KY	34	40.6	16.5	47.5	71.5

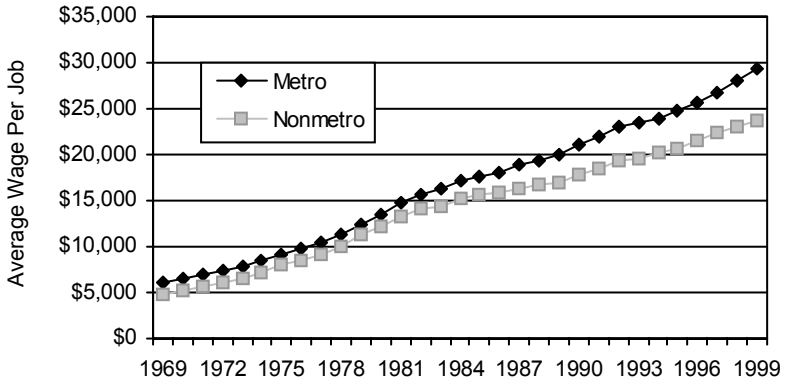
Source: Bureau of Economic Analysis

has managed to keep pace with rural America in terms of job creation and wage measures, even outpacing rural America's overall per capita income change. At the state level, Kentucky has been closing the income gap between itself and the rest of the nation.[84] But rural Kentucky continues to lag behind both urban Kentucky and the United States as a whole with regard to job growth, wages, and overall income. This earnings gap closed between 1970 and 1985 but then began to open again during the last decade, perhaps partly because the so-called "new economy" industries largely bypassed rural Kentucky. While the current technology slump reveals the potential dangers of relying on these industries, current short-term weakness does not accurately measure long-term potential. But regardless of its causes, the gap between per capita personal income in rural Kentucky and urban America would have been even wider had it not been for the rapid increase in retirement income and *residence-adjusted wages*.

During the 1990s—a time widely acknowledged as the longest period of economic expansion in the nation's history—the rural South experienced a 16.5 percent growth in its number of jobs, nearly matching the nation's 17.5 percent growth. However, the earnings differential between the rural South and the rest of the nation—now at its highest rate since 1969—grew from $5,893 in 1978 to $10,900 in 1998.[85] The number of jobs in rural Kentucky may have grown, but job quality and rural-urban per capita income disparities have continued to worsen.

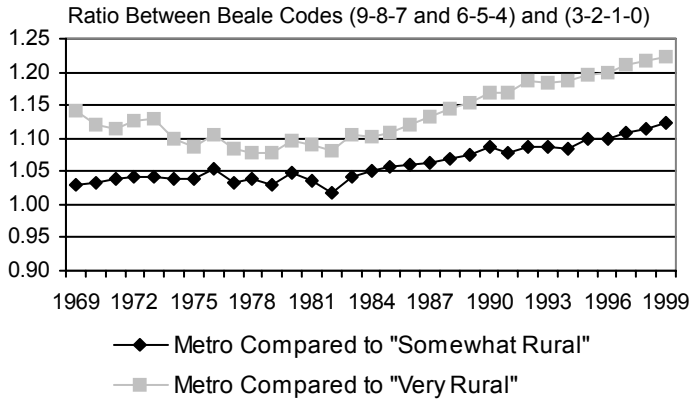
Figure 19 depicts the expansion of this gap between average wages in Kentucky's metro and nonmetro counties over a 30-year span, from 1969 to 1999. For a time, increases in nonmetro wages more or less kept pace with wage increases in metro areas, though consistently lagging behind. Then, in the early 1980s, nonmetro wages began to fall farther and farther behind, exacerbating the wage gap. Figure 20 offers a more nuanced representation of this trend during the same span of time, using Beale Codes to contrast wages in urban areas with those in

FIGURE 19
Wages Are Increasing Faster in Kentucky's Metro Counties



Source: Bureau of Economic Analysis

FIGURE 20
Kentucky's Geographic Wage Gap



Source: Bureau of Economic Analysis

"somewhat rural" areas and with wages in "very rural" areas. Again, we see that urban wages continually outstrip wages available elsewhere, but "very rural" areas suffer from this disparity to an even greater extent than do "somewhat rural" areas. Clearly, rural Kentucky is in trouble.

Rural Kentucky, along with much of rural America, faces serious questions concerning its prospects for economic performance, and future economic opportunities in rural Kentucky will partly be determined by current comparative advantage. Traditionally, rural Kentucky's economy has been based on agriculture and coal, but these industries have suffered declines in recent years due to international

competition and declining demand. Exacerbating rural Kentucky's woes, the disparity between rural and urban economic opportunities has helped drain the rural workforce, as an increasing number of people commute or migrate in pursuit of higher-quality, better-paying jobs.[86] The resulting loss of young people—the workforce of the future—portends further economic decline and marginalization for Kentucky's rural areas.

WHY THESE TRENDS ARE IMPORTANT

For a number of reasons, the diverging trends in per capita income and average wages between rural and urban Kentucky or Kentucky and the rest of the nation are issues of concern. Per capita income and average wages are measures of economic opportunity. If rural Kentucky is falling behind urban Kentucky on these indicators, people are more likely to leave rural areas in search of good-paying jobs. When commuting from one county to work in another, they lose time with their families and in their communities. The potential for driving accidents may be greater, and the cost of wear and tear on vehicles can be high. Finally, the state's highways and roads become more crowded, as people are forced to drive farther to find good-paying jobs. Even worse, Kentucky often permanently loses the social and economic benefit when workers choose to migrate from rural areas completely as an alternative to these long drives.

Second, public expenditures and taxes must be balanced across the state. It is in the interest of all Kentuckians that a strong rural economy contributes to the state coffers. A weaker rural economy means more transfers from urban Kentucky to rural Kentucky, which is already increasingly dependent on government transfer payments such as Medicare, Medicaid, and Social Security. While this partly reflects the aging of the population, it is also based on income differentials.

Finally, a lagging rural economy will only stall the state's goal of reaching the national average in per capita income. The *urban* Kentucky economy would have to grow much faster if the state average is to catch up to the nation's. A stronger rural economy would help all parts of the state. Otherwise, we are likely to experience an ever-growing income gap between rural and urban Kentucky.

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[82] G. Andrew Bernat Jr. and Eric S. Repice, "Industrial Composition of State Earnings in 1958-98," *Survey of Current Business* Feb. 2000: 70.

[83] Mark C. Berger and Glenn C. Blomquist, "Kentucky's Per Capita Income: What Should Be the Goal?," in *2000 Kentucky Annual Economic Report* (Lexington: University of Kentucky Center for Business and Economic Research and Gatton College of Business and Economics, 2000) 1-7.

[84] Mark Berger, "Kentucky's Per Capita Income Catching Up with the Rest," in *Kentucky Annual Economic Report* (Lexington: University of Kentucky Center for Business and Economic Research, 1997).

[85] Fred Gale and David McGranahan, "Latest Trends in Nonmetro Jobs and Earnings: Nonmetro Areas Fall Behind in the New Economy," *Rural America* 16.1 (2001).

[86] Paul Coomes and Michael Price, "The Recent Economic Performance of Regions in Kentucky," Kentucky Economic Development Partnership and Kentucky Cabinet for Economic Development, May 2001.

PROGRESS WITH CAVEATS

ENVIRONMENTAL GROUND GAINED AND LOST

By Leslie Cole
Environmental Quality Commission

Since 1992, the Environmental Quality Commission (EQC) has been reporting on the status of Kentucky's environment. What have these reports told us? They have told us that environmental laws passed in the 1970s, 1980s, and 1990s, along with public and private investments, have paid off. Our air and water are cleaner than was the case 25 years ago, and Kentucky's natural resources are better protected.

The Environmental Quality Commission's report, *State of Kentucky's Environment 2000-2001*,[87] reveals that we continue to build upon this progress on several fronts. Consider these facts:

- a record number of Kentucky households now participate in a door-to-door garbage collection program,
- public drinking water in many communities is safer, with far fewer persistent violators of safe drinking water standards,
- levels of air pollution continue to decline, and
- populations of some of our most fragile species of wildlife, such as the bald eagle and Virginia big-eared bat, are growing—the result of protecting critical habitat.

But we have also found some disturbing trends such as:

- water quality inspections, violations, and fines were near record lows in 1999,
- we are still losing our best farmland to other uses,
- the number of rare species in Kentucky continues to increase,
- Kentuckians are consuming far more energy than ever before and conserving less, and

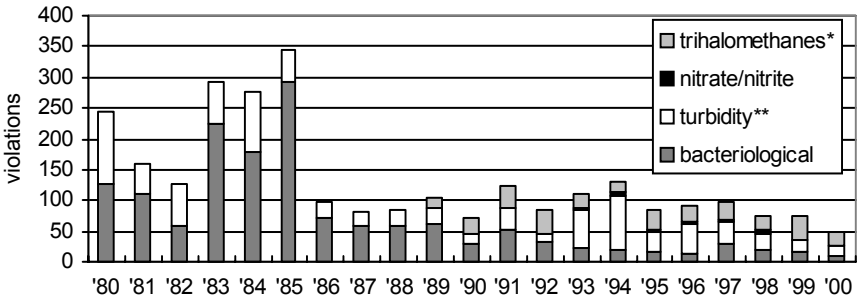
- toxic chemicals, such as mercury, have made their way into our lakes and rivers, making it unsafe to consume some species of freshwater fish.

As we look to the future, Kentucky's environment will face further challenges from a growing population and expanding economy. And a number of emerging issues, such as proposals to build 22 new power plants, will pose new challenges at a time when environmental programs have suffered from recent budget cuts due to state revenue shortfalls. In this light, monitoring of environmental trends and conditions is more important than ever.

DRINKING WATER

Kentucky is gaining ground when it comes to the safety of public drinking water. An estimated 87 percent of the state's population or 3.5 million Kentuckians have access to public drinking water supplied by some 656 systems. As shown in Figure 21, violations of public drinking water standards were at record lows in 2000. Only 30 of the 656 public systems had violations of health-based drinking water standards in 2000. The most common contaminants detected are bacteria, turbidity or cloudiness which interferes with the disinfection process, and trihalomethanes which are organic chemicals created during the treatment process. Kentucky is making headway in having its most problematic plants comply with drinking water rules. For example, the number of Kentuckians served by systems that persistently violate drinking water standards dropped from 38,000 in 1997 to 8,000 in 1999.

FIGURE 21
Public Drinking Water Standard Violations in Kentucky

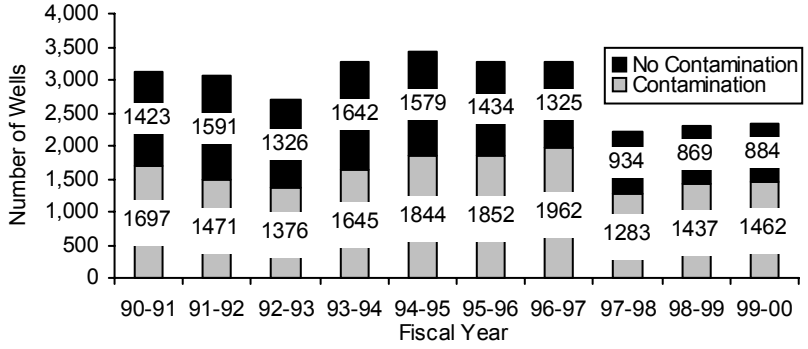


Source: Kentucky Division of Water. Compiled by the Environmental Quality Commission.
Based on violations of Maximum Contaminant Levels (MCLs).
**Trihalomethane monitoring not required prior to 1989.*
*** More stringent turbidity standards took effect in 1993. Does not include monitoring and reporting violations for Phase II and V contaminants.*

But that does not mean we are not at risk from drinking bad water. Half of the drinking water plants in Kentucky had at least one reporting or monitoring violation in 1999—meaning that they are not properly monitoring drinking water for contamination or reporting the results to the state. And if you are among the thou-

sands of Kentuckians who rely on private wells for drinking water, there is a 50 percent chance that your water may be contaminated (see Figure 22). Water testing of private wells by local health departments continues to find that more than half of the wells sampled are likely contaminated with bacteria. Well owners are encouraged to have their water tested and treated regularly.

FIGURE 22
Voluntary Testing of Private Drinking Water Wells for Bacteria



Source: Kentucky Department for Public Health
Tests of private wells are for total coliform bacteria and are done at the request of well owners.

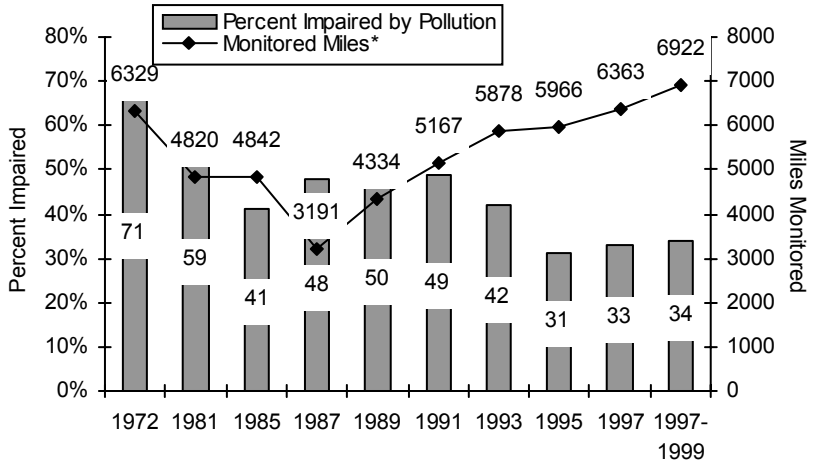
WATER RESOURCES

In the area of water resources, EQC found that after many years of improving trends, progress has stalled when it comes to restoring water quality of our streams, rivers, and lakes. Figure 23 reveals that since 1995, about one third of Kentucky's monitored waterways were polluted. Agriculture remains the leading source of water pollution. Efforts to address pollution from farming operations continue. All farms are now required to have a plan to prevent water pollution. Kentucky is also losing ground in restoring our public lakes. In 1999, five more lakes were added to the list of 35 impaired by pollution. The increase in lake pollution is attributed to the 1999 drought, which resulted in lower water and oxygen levels and increased amounts of algae.

One of the most disturbing trends EQC found was that the number of water quality field inspections, violations, and fines dropped to near record lows in 1999, as can be seen in Figure 24. This is attributed to the diverting of field inspectors to other areas of need, including addressing the drought and the problem of open dumping.

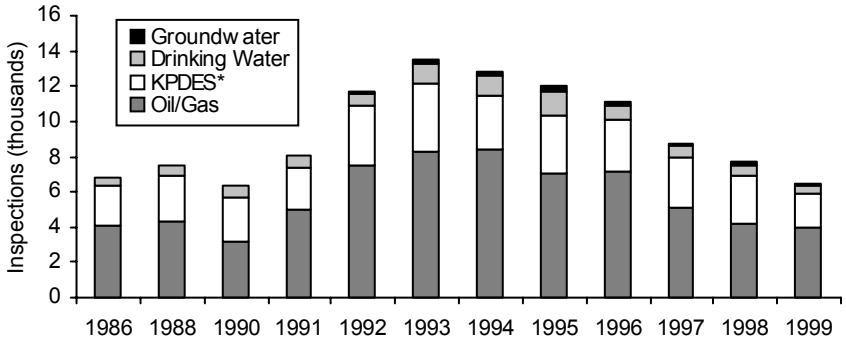
As we learn more about the environment, we are also discovering new threats. For example, testing of fish resulted in two new fish consumption advisories in 2000. In April 2000, a fish consumption notice was issued for all waterways and lakes after mercury was detected in fish. Kentucky now has eight fish consumption advisories in effect.

FIGURE 23
Percent of Kentucky Waterways Impaired by Pollution and Number of Miles Monitored



Source: Kentucky Division of Water. Compiled by the Environmental Quality Commission.
1972-1981 data include river and stream miles monitored and evaluated. 1982-1999 based on monitored river and stream miles.
Ohio River monitoring data collected by ORSANCO not included. During 1998-99, the Division of Water only monitored waterways in the Kentucky River Basin.
**Percent based on 1998-99 monitoring data for the Kentucky River Basin and 1997 monitoring data for the other river basins in Kentucky.*

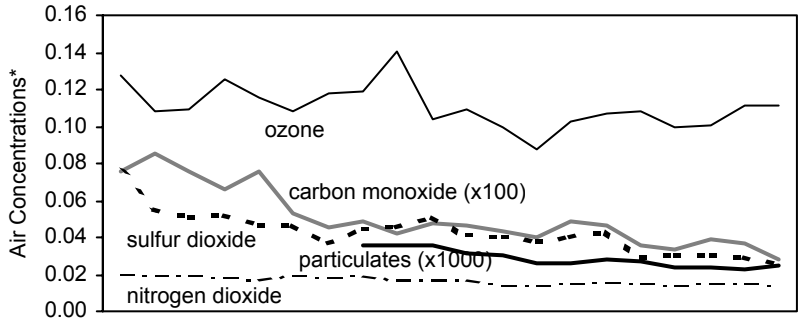
FIGURE 24
Water Quality Inspection Trends in Kentucky



Source: Kentucky Division of Water
**Facilities with Kentucky Pollution Discharge Elimination System Permits. Does not include inspections at KPDES permitted coal mines which are conducted by the Kentucky Department of Surface Mining Reclamation and Enforcement. Does not include complaint and open dump investigations.*

sulfur dioxide, and some of the other criteria air pollutants, although this progress has slowed in recent years. All regions of the state comply with air quality standards. A significant air quality milestone was reached in the year 2000. Jefferson

FIGURE 25
Air Concentrations of Pollutants in Kentucky



Source: Kentucky Division for Air Quality
**Concentrations from state-monitored sites based on the following: ozone-averaged second maximum, one-hour standard; carbon monoxide-second maximum eight-hour average. Nitrogen (PM_{10}): annual statewide average; SO_2-second maximum, 24-hour average. Concentrations in parts per million for all pollutants except particulates, which are measured in micrograms per cubic meter.*

County came into compliance with the one-hour ground-level ozone standard. Ozone pollution can cause breathing problems and respiratory distress, especially in children and the elderly. This is good news for Louisville's residents, who have been exposed to unsafe levels of ozone pollution for many years.

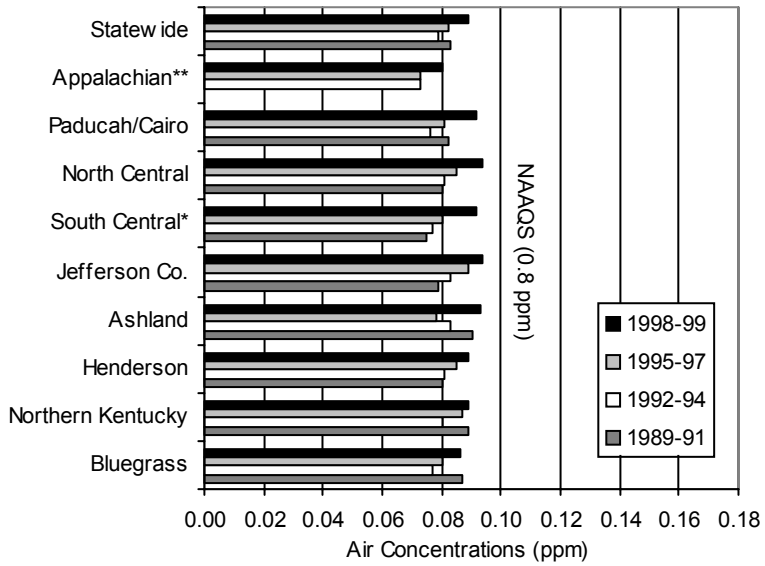
Kentucky also continues its progress in reducing sulfur dioxide (SO2) emissions from coal-fired power plants. Since 1980, SO2 emissions from power plants have dropped 42 percent in response to Clean Air Act requirements. But power plants are not faring as well when it comes to reducing nitrogen dioxide (NOx), another pollutant that can impair health. NOx emissions are up 11 percent since 1980. Kentucky power plants will be required to reduce NOx emissions by 66 percent by the year 2004.

We have also gained ground in reducing chemical emissions linked to the destruction of the earth's stratospheric ozone layer. During 1999, 15 industries released 3.83 million pounds of ozone-depleting chemicals to the air. The good news is this is 3.4 million pounds less than what was released in 1996. The bad news is that Kentucky still leads the nation in releases of these ozone-destroying chemicals. Other air quality challenges remain as well. Some 21 counties will likely not meet a new more stringent eight-hour ozone standard set by the U.S. Environmental Protection Agency. Figure 26 shows the difficulty Kentucky will have in meeting the standard. And six of the state's nine air quality control regions will have difficulty meeting a new particulate standard aimed at preventing small particles of dust and soot from entering our lungs.

WASTE MANAGEMENT

While Kentucky faces many environmental challenges, none are as great as managing our waste. Kentuckians are generating and disposing of more waste

FIGURE 26
Regional Air Concentrations of Ground-Level Ozone
(0.8 ppm 8-Hour Standard)



Source: Kentucky Division for Air Quality
NAAQS- National Ambient Air Quality Standard. Based on regional 3-year average of 8-hour fourth maximum ozone standard with the exception of a 2-year average for 1998-99.
**Data not available for 1989-90*
***Data not available for 1989-91*

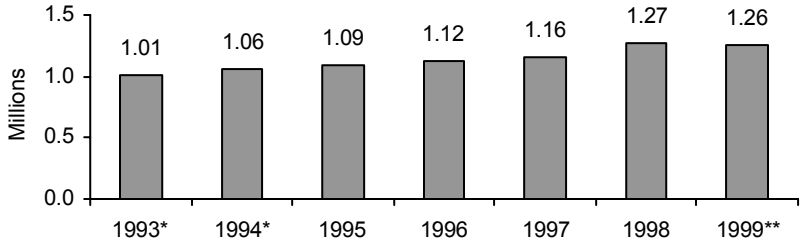
than ever before—some 5.5 pounds per person per day. That amounts to 22 million pounds of garbage a day.

State and local efforts to promote the proper collection and disposal of solid waste have shown some progress. Kentucky now has 26 contained regional municipal solid waste landfills. These landfills have a capacity to dispose of our waste for the next 17 years.

Figure 27 shows that 1.26 million households, 80 percent of the state's total, now participate in a door-to-door garbage collection program. That's a gain of 100,000 households since 1997. However, participation rates vary greatly by county with 20 counties reporting participation rates below 40 percent (see Figure 28). Only 29 counties have passed mandatory garbage collection ordinances.

It is estimated that the remaining Kentucky households haul their waste to landfills or transfer stations for disposal. However, state officials believe 2 percent to 5 percent of Kentucky's households are illegally dumping their waste. That amounts to thousands of pounds of waste dumped illegally every day. Much of this waste winds up in our lakes and rivers and strewn across hillsides. While Kentucky is winning the battle to clean up open dumps, with some 2,000 dumps cleaned up in 1999, hundreds of old landfills still await cleanup. A new state law passed in 2002

FIGURE 27
Kentucky Households Participating in Door-to-Door Garbage Collection



Source: Kentucky Division of Waste Management, County Solid Waste Reports
*Data represent total collection; door-to-door collection data not available.
**Decline in households participating in door-to-door garbage collection between 1998 and 1999 is attributed to reporting discrepancies by counties, according to the Kentucky Division of Waste Management.

winds up in our lakes and rivers and strewn across hillsides. While Kentucky is winning the battle to clean up open dumps, with some 2,000 dumps cleaned up in 1999, hundreds of old landfills still await cleanup. A new state law passed in 2002 will provide some funding to begin to address old leaking landfills as well as support programs to clean up illegal dumps.

TOXICS

Toxic chemicals produced as a byproduct of the manufacturing process also pose environmental and health risks. In 1999, some 366 industries in Kentucky reported releasing 100 million pounds of toxic chemicals to the environment. Kentucky ranks 20th in the nation in industrial toxic emissions.

On the positive side, trends reveal that toxic releases are declining from those industries that have been reporting for the past several years. Toxic releases from these industries fell from 49 million pounds in 1996 to 40 million in 1999—an 18 percent drop.

But newly reporting industries for 1999, including electric utilities, have added another 60 million pounds of toxic chemicals to the state total. Figure 29 reveals that coal-fired power plants led Kentucky in toxic chemical releases. This industry accounted for 59 percent of the 100 million pounds of toxic chemicals reported released in 1999.

We are also not making progress when it comes to reducing the amount of toxic chemicals used on our farmlands. Since 1990, an average of 9 million pounds of pesticides was used on Kentucky farms each year.

The Environmental Quality Commission found that we continue to place many of our children at risk from exposure to toxic chemicals, particularly lead. During the year 2000, testing of about 21,000 children by local health departments found that an average of 1 percent to 2 percent of the tested children had lead poisoning while another 8 percent to 12 percent had blood lead levels of concern. An estimated 148,000 children may be at risk of lead poisoning in Kentucky.

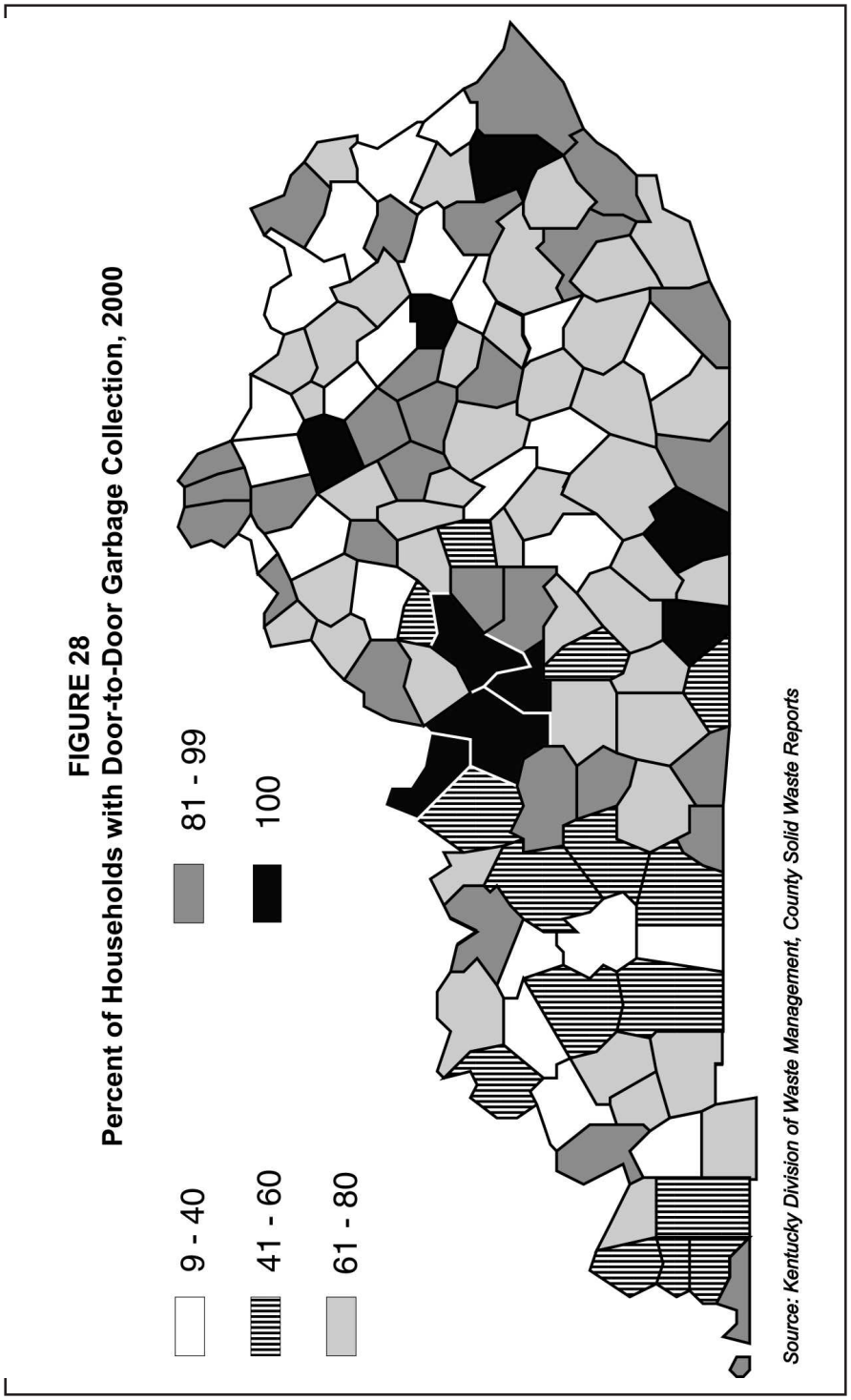
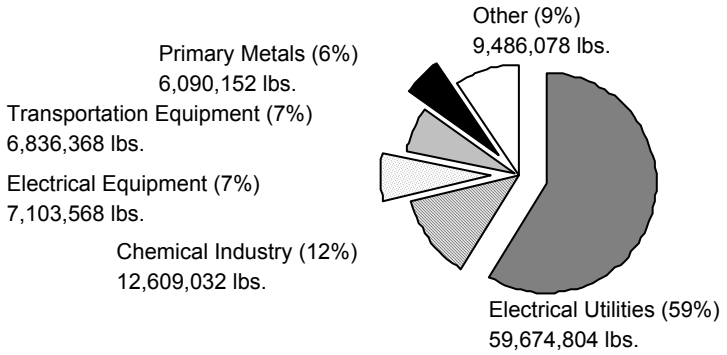


FIGURE 28
Percent of Households with Door-to-Door Garbage Collection, 2000
9 - 40
41 - 60
61 - 80
81 - 99
100
Source: Kentucky Division of Waste Management, County Solid Waste Reports

FIGURE 29
Toxic Chemicals Released in Kentucky, by Source, 1999

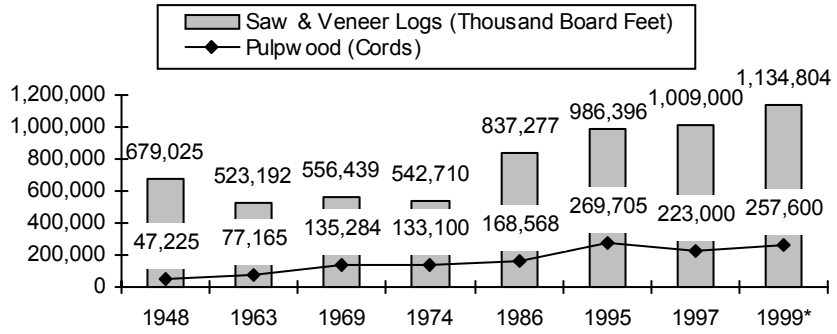


Source: Toxics Release Inventory Report. Releases reported at site of generation.

NATURAL RESOURCES

We continue to lose ground when it comes to protecting our best farmland. Kentucky's prime crop and pastureland fell another 85,000 acres between 1992 and 1997. Many acres are lost permanently to development. An average of 109 acres is converted every day to urban areas and roads in Kentucky. Land use conflicts and urban sprawl continue to place pressure on our rural lands, the environment, and overall quality of life.

FIGURE 30
Forest Harvesting Trends in Kentucky

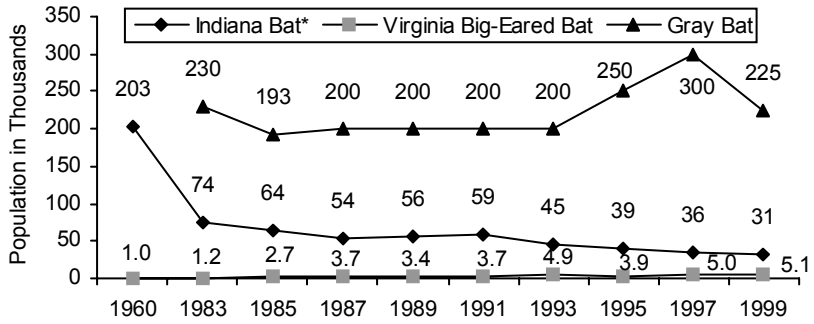


Source: US Forest Service
**Preliminary data, subject to change. Based on data collected from the timber product output surveys. The surveys canvass all primary wood-using plants in Kentucky and other states to determine the level of harvests from Kentucky forests.*

Kentucky's forests also continue to be logged at record levels. Figure 30 shows that during 1999 a record 1.13 billion board feet of sawtimber was harvested from

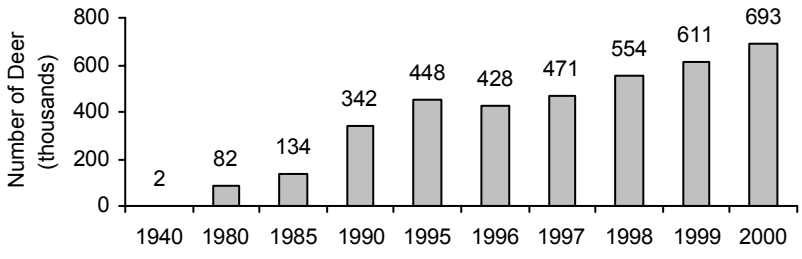
Kentucky's forests. That's a 12 percent increase over 1997 levels and double the harvesting levels of 1974. A state law passed in 1998 may help to reduce the effect of logging on water quality. The Forest Conservation Act has resulted in the inspection of nearly 7,000 logging operations and a number of enforcement actions to correct erosion and other environmental problems associated with timber harvesting.

FIGURE 31
Federally Designated as Threatened and Endangered Bat Populations in Kentucky



Source: Kentucky Department of Fish and Wildlife Resources
**Based on bat populations at three primary caves: Bat Cave (Carter County), Hundred Dome, and Dixon Caves (Edmonson County).*

FIGURE 32
White Tail Deer Populations in Kentucky



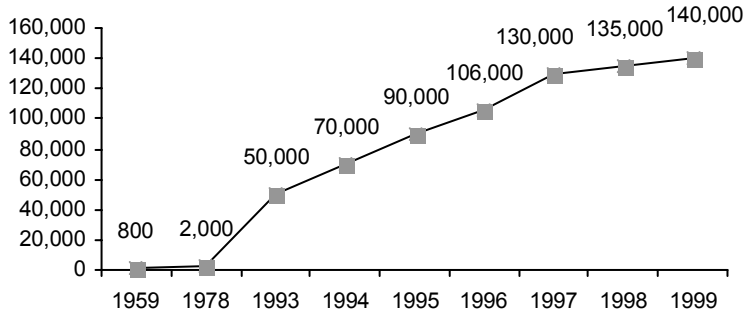
Source: Kentucky Department of Fish and Wildlife Resources

At the same time, threats to Kentucky's rich diversity of wild species continue to mount. We are losing ground in several areas. For example, the number of threatened and endangered species increased between 1999 and 2001—from 34 species to 44 species. According to the U.S. breeding bird survey, more bird species are declining in Kentucky than are increasing—the likely result of habitat loss.

But there is encouraging news as well. Bald eagle populations continue to increase. Kentucky is now home to 23 nesting pairs of eagles. In 2000, the state saw

the first successful nesting pair of bald eagles in eastern Kentucky. Duck populations are stable and geese populations are up—the likely result of efforts to protect Kentucky's wetlands. Populations of some species of endangered bats are rising as well, due to efforts to protect caves (Figure 31). And many game species are thriving with wild turkey and deer populations at record levels (Figures 32, 33).

FIGURE 33
Wild Turkey Populations in Kentucky

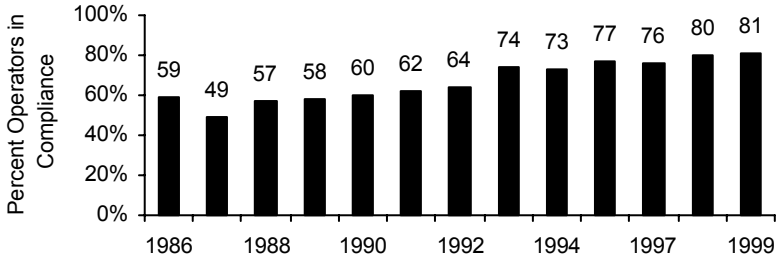


Source: Kentucky Department of Fish and Wildlife Resources

RESOURCE EXTRACTION

Resource extraction activities remain the second leading source of water pollution in the Commonwealth. The good news is that Kentucky continues to gain ground in ensuring compliance with state coal mining regulations. For example, the forfeiture of coal mine bonds due to the failure to operate or reclaim a mine site properly was near record lows in 1999. And Figure 34 shows compliance at coal mines was at a

FIGURE 34
Kentucky Coal Mine Compliance



Source: US OSM Annual Evaluation Reports
Based on random oversight inspections conducted by the Federal Office of Surface Mining. 1996 data not included due to changes in inspection procedures.

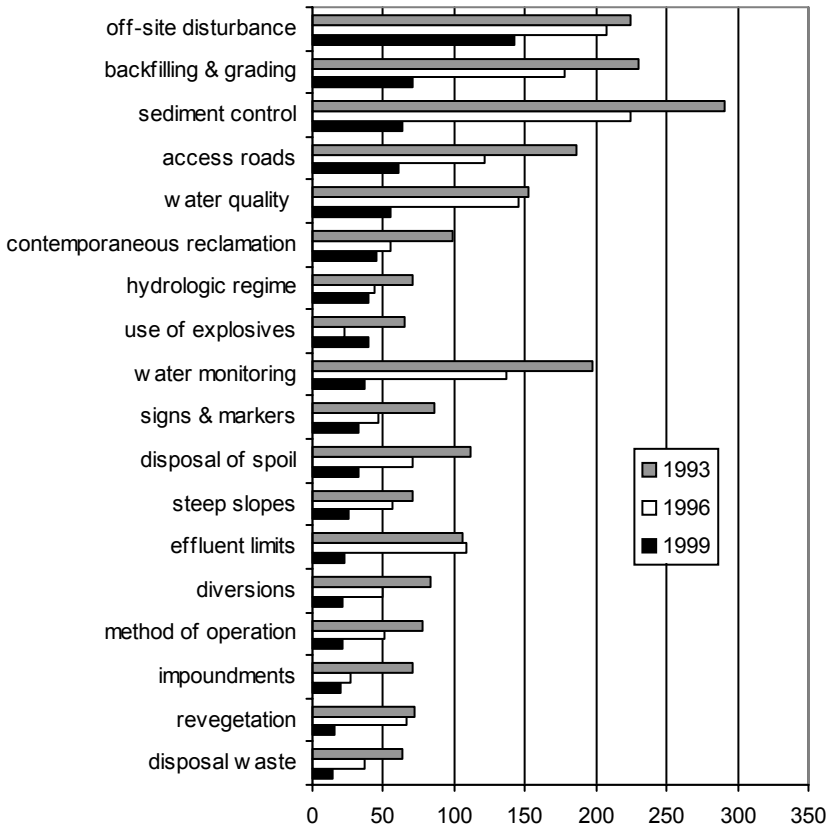
record high in 1999, at 81 percent. Public complaints concerning coal mines were at their lowest levels in 1999 with 846 complaints.

Still, with all this good news, these gains were overshadowed in 2000 by one of the worst coal slurry spills in the state's and the nation's history. The failure of the

Martin County Coal slurry released 250 million gallons of a slurry water mixture to nearby waterways. Kentucky continues to assess the damage to the Tug Fork and other waterways. The spill has also led many to question the safety of coal waste impoundments, resulting in a state review of 117 impoundments.

Problems still also exist at active coal mines. During 1999, 942 violations were cited at coal mines. Off-site disturbances, such as slides, were among the most frequent violations cited, as seen in Figure 35.

FIGURE 35
Most Frequently Cited Coal Mine Violations in Kentucky



Source: Kentucky Department of Surface Mining Reclamation and Enforcement
Based on violations of performance standards.

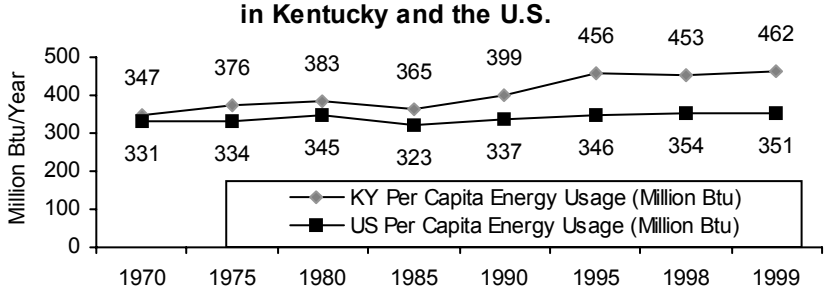
Numerous old mine sites also continue to pose risks to the environment and public safety. Kentucky has an estimated 80,000 to 150,000 acres of abandoned-mine lands. To date, 20,000 acres have been reclaimed and 1,300 projects completed at a cost of $350 million. While we continue to make some progress in addressing some of our worst abandoned-mine sites, reclamation of these lands has

been a slow process, and much more funding is needed to reclaim abandoned-mine lands in Kentucky.

ENERGY

Trends reveal that Kentuckians are using more energy than ever before. Energy consumption has increased 64 percent since 1970. Figure 36 shows that Kentucky ranks well above the national average in per capita energy use due to the presence of energy-intensive industries. Most of the energy consumed in Kentucky is from nonrenewable resources such as coal and petroleum. Only 2 percent of the electric energy consumed in the state comes from a renewable resource.

FIGURE 36
Per Capita Energy Consumption in Kentucky and the U.S.



Source: US Department of Energy, Energy Information Administration, State Energy Data Reports, 1965-99

Kentuckians are also driving more miles than ever before in less fuel-efficient cars. There are 3.4 million cars registered in Kentucky. The average Kentuckian drove more than 12,000 miles last year, double the national average. Average fuel consumption per vehicle has steadily increased during the past 10 years due to the popularity of SUVs and larger, less fuel-efficient vehicles.

The impact of the energy crisis hit home in Kentucky during the past few years with the doubling of natural gas prices and the spiking of prices of gasoline sold at the pump. Natural gas and gasoline prices have since declined. But shortages, deregulation, and other factors will continue to make energy prices volatile.

The energy crisis and deregulation also led to proposals to site 22 new power plants in Kentucky and prompted the governor to issue a moratorium on permits. A new state power plant siting law was passed in 2002. The law should provide a more comprehensive assessment of environmental and other impacts that these plants pose to communities.

FINAL REMARKS

The *2000-2001 State of Kentucky's Environment* report shows that we have made significant headway in protecting Kentucky's environment. Kentucky should feel proud of the accomplishments we have made, from improving the quality of the air we breathe to doing a better job of collecting and disposing of our waste. Can we do better? Yes. But it will take the collective efforts of industry, business,

individuals, government, and elected officials if we are to address the many challenges that remain.

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[87] The 172-page report, *State of Kentucky's Environment 2000-2001*, is available at a cost of $10. Checks must be made payable to the Kentucky State Treasurer and mailed to EQC, 14 Reilly Rd., Frankfort, Kentucky, 40601. The report is also available online at www.kyeqc.net. The report is also available at all public libraries.

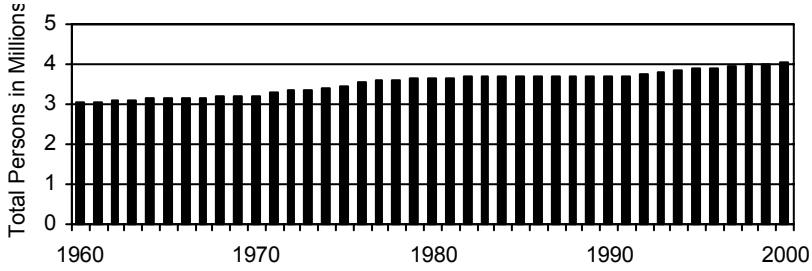
ONE MILLION MORE

POPULATION GROWTH, 1960-2000

By Michael Price
Urban Studies Institute
University of Louisville

Just over four million Kentuckians were counted in the 2000 Census, an increase in the state population by one million persons over the 1960 Census (see Figure 37). The previous addition of a million Kentuckians had taken more than 60 years. Here, we look back over the past four decades at the major demographic trends that are both cause and consequence of this benchmark of population growth.

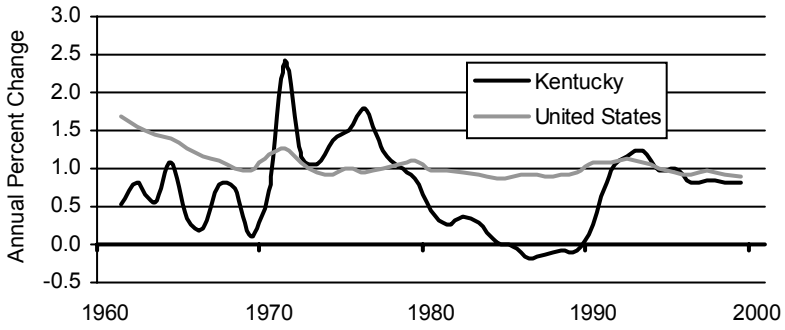
FIGURE 37
Kentucky Population



Source: University of Louisville Urban Studies Institute

When we look at annual rates of population growth over the past 40 years, we see that Kentucky has been fairly erratic compared with the United States and that the state population grew faster than the U.S. population during only the 1970s (see Figure 38). Population growth below the national rate characterized the 1960s and 1980s in Kentucky. In the 1990s, however, the state's population growth rate consistently equaled that of the nation—about 1 percent per year.

FIGURE 38
Population Growth Rate

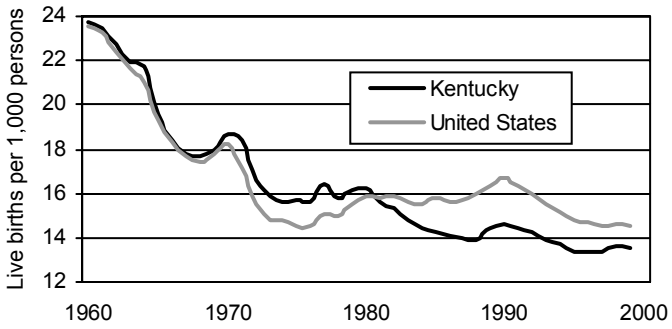


Source: University of Louisville Urban Studies Institute

The demographic factors that comprise population growth represent a simple calculation. What demographers refer to as the process of *natural increase* adds to the population by fertility, the number of live births, and reduces the population by mortality, the number of deaths that occurred.

First, looking at birth rates, we see that Kentucky in 1960 was typical of the U.S. baby boom—birth rates were high at roughly 24 live births per 1,000 persons (see

FIGURE 39
Birth Rates



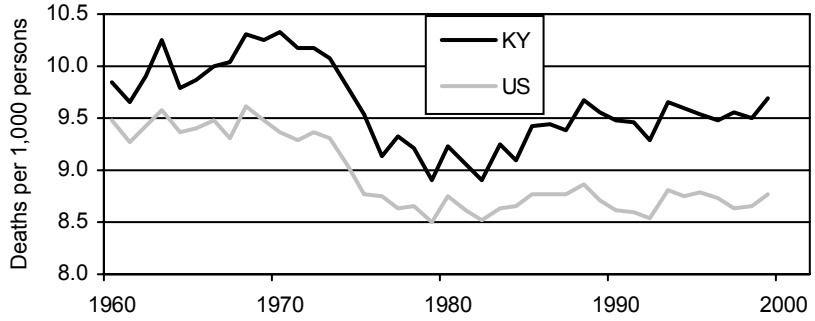
Source: University of Louisville Urban Studies Institute

Figure 39). Kentucky also paralleled the nation in the subsequent decline in birth rates that occurred into the 1970s, a decade when the Kentucky birth rate hovered slightly above the national rate. However, beginning in 1980, national and state birth rates began to diverge. The most recent data available show the Kentucky birth rate at 13.5 births per 1,000 persons per year compared with a U.S. birth rate of 14.6.

On the debit side of the population ledger, mortality rates over the 40-year period were higher in each year than the U.S. average (see Figure 40). Moreover, since 1980, Kentucky death rates have risen overall, moving away from the more

stable national death rate. The most recent death rate for Kentucky was 9.7 deaths per 1,000 persons per year. The U.S. death rate was 8.7.

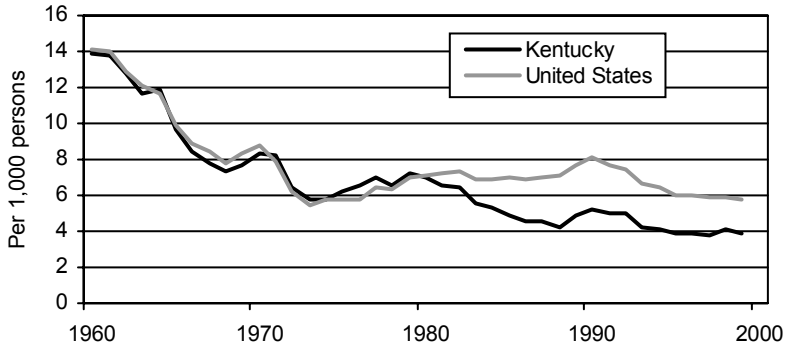
FIGURE 40
Death Rates



Source: University of Louisville Urban Studies Institute

The Kentucky rate of natural increase mirrored the U.S. decline in the 1960s, leveling off in the 1970s (see Figure 41). Beginning in 1980, however, lower fertility and higher mortality dropped the state rate below the national rate. By the end of the period, the Kentucky rate of natural increase was 0.4 percent per year. The U.S. rate was 0.6 percent.

FIGURE 41
Natural Increase Rates

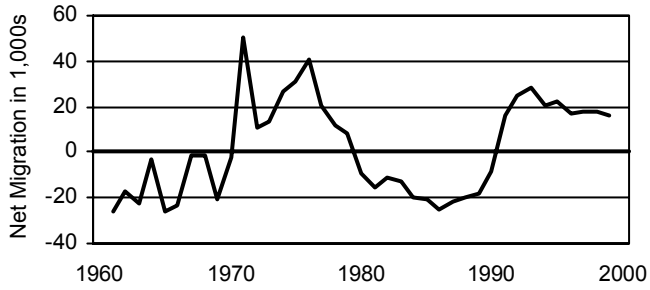


Source: University of Louisville Urban Studies Institute

Natural increase represents only part of the demographic equation. Migration—the mobility of the population—is the remainder of the equation. Net migration is the difference between the number of persons who move in and the number who move away. While natural increase results in gradual and predictable population growth, net migration in Kentucky has been inconsistent over the last four decades (see Figure 42). The 1960s and 1980s were characterized by net out-migration; more people left the Commonwealth than moved here. However, during the 1970s

and 1990s, Kentucky was more often the destination than the place departed. In the 1990s, migration resulted in a net gain of 191,000 persons.

FIGURE 42
Migration in Kentucky

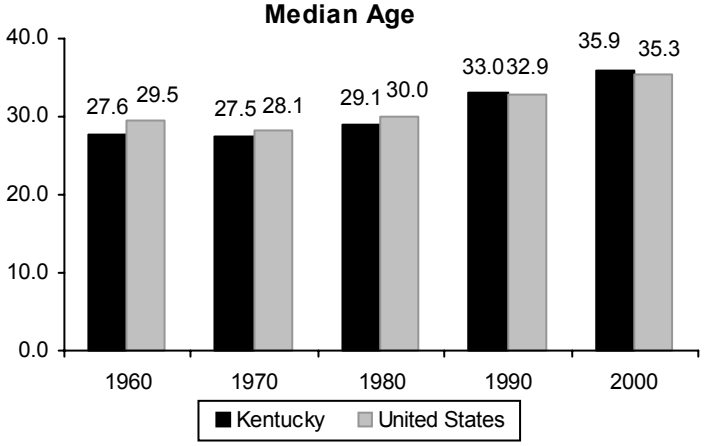


Source: University of Louisville Urban Studies Institute

During the last four decades, the state population not only grew by one million, but it also changed subtly in its structure or composition. The aging of the population—often referred to as its *graying*—is an example of this structural change. By aging of the population, we mean that more persons are living longer and that older age cohorts comprise larger shares of the total population.

One measure of age structure is the median age—the age at which half the population is younger and the other half is older. Kentucky's median age, like that of the nation's, has been rising (see Figure 43). From 1960 through 1980, the median age

FIGURE 43
Median Age



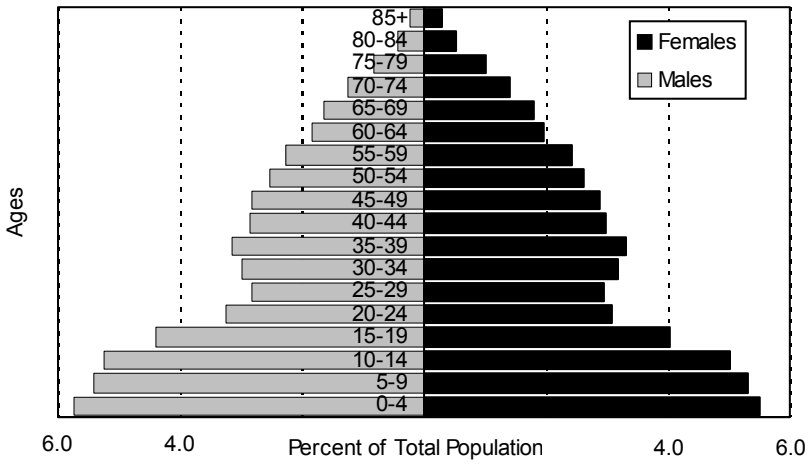
Source: University of Louisville Urban Studies Institute

in the state was below the national median age; hence, Kentuckians could be considered younger than the U.S. population. By 1990, the state and national medians were roughly equal at 33 years. By 2000, the state's median age was 35.9 years and

the U.S. median was 35.3. Kentuckians are now, albeit only slightly, older than the U.S. population.

Another tool demographers use to examine demographic structure is the population pyramid. The pyramid is a graphic display in which a stack of horizontal bars represents the size of age-sex cohorts. In 1960, Kentucky's demographic structure was very much a pyramid (see Figure 44). The youngest cohorts were the largest.

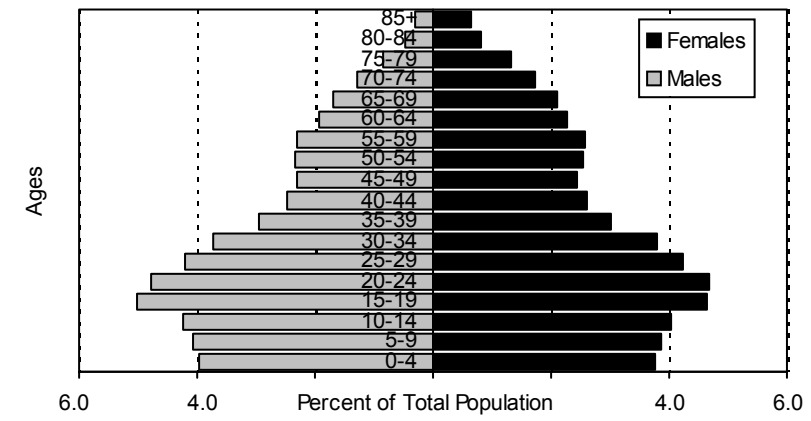
FIGURE 44
1960 Kentucky Population



Source: University of Louisville Urban Studies Institute

The smallest cohorts were those born during the Great Depression of the 1930s—a period of historically low fertility. In 1980, teenage boys and girls, and young men

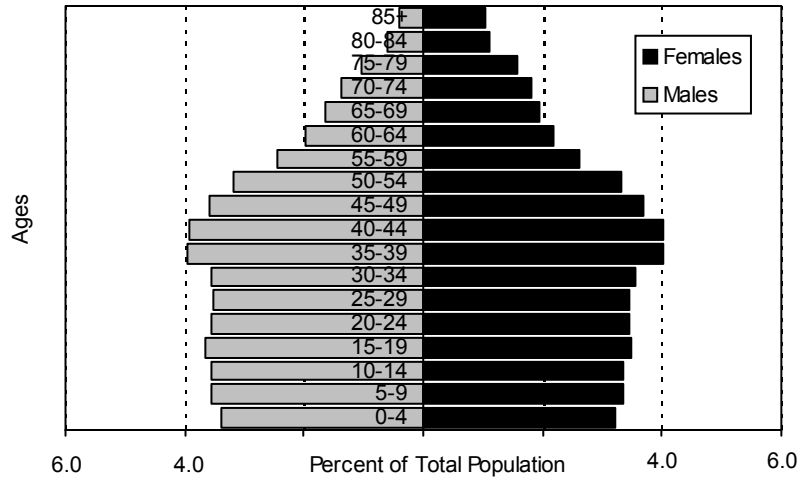
FIGURE 45
1980 Kentucky Population



Source: University of Louisville Urban Studies Institute

and women in their early 20s, represented the largest segments of the Kentucky population (see Figure 45). The size of young children cohorts was significantly smaller than 20 years earlier. By 2000, Kentucky's median age had reached 36, and the largest cohorts were aged 35-39 and 40-44 (see Figure 46). Younger cohorts are approaching a *steady state* in which the relative size of each cohort is roughly equal.

FIGURE 46
2000 Kentucky Population



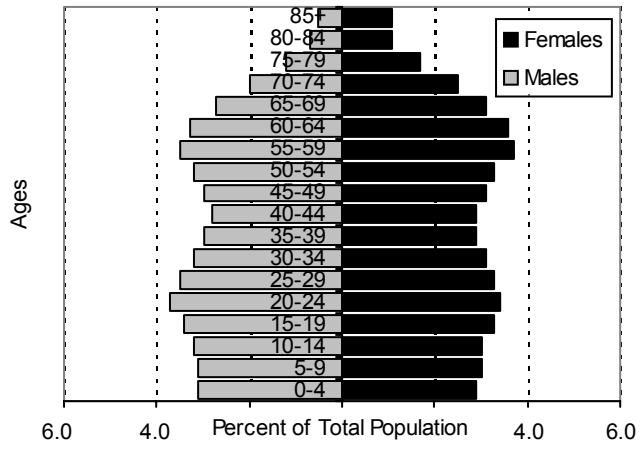
Source: University of Louisville Urban Studies Institute

If we gaze into the future and assume current trends—those we experienced in the 1990s—continue, Kentucky's population will add another million persons in 25 years. In 2020, Kentucky's steady-state population is more evident—cohorts aged 55-59 equal those aged 20-24 (see Figure 47). This forecast assumes that migration gains in Kentucky will continue to outpace national rates of gain from international migration—a tenuous assumption indeed.

That Kentucky added one million persons to its population over the past 40 years is certainly a significant benchmark. But over this period, the components of the state's population growth as well as its demographic structure have gone through some significant transformations. We went from a population that was generally younger than the U.S. population to one that is currently older. Granted, this transformation has been gradual, but this change does reflect an important trend with significant consequences—consequences that must be faced by the Commonwealth before they must be dealt with in many other parts of the nation.

Changes in how we grew—in how we added to our population—are also important. As birth rates decline and death rates rise, natural increase in Kentucky has fallen behind the national rate. During the 1990s, the Commonwealth was able to keep pace with the nation's growth through net in-migration. Natural increase accounted for 40 percent of the state's population growth—migration accounted for 60 percent. Natural increase in Kentucky is expected to continue to decline and remain below the United States. To keep pace with the nation's growth in the future

FIGURE 47
2020 Kentucky Population



Source: University of Louisville Urban Studies Institute

will require that Kentucky have net in-migration at rates even higher than our recent experience. And indeed if the Commonwealth continues to be a destination for migrants, we can certainly expect even more changes in our population make-up. Migration will diversify the nationality, ethnicity, and race of our population.

BLUEGRASS AND BLACKTOP

THE TRANSFORMATION OF KENTUCKY'S LANDSCAPE

By Mark Schirmer
Kentucky Long-Term Policy Research Center

Around the country, land use has increasingly become a contentious topic as policymakers, developers, environmentalists, and the citizens debate where, how, and even *if* development should occur. Though there seems to be a consensus that the manner in which growth takes place should ideally benefit the surrounding communities, debate rages endlessly over what constitutes "beneficial" and which competing needs should take precedence. In Kentucky, many communities have sought to address concerns over problematic development patterns through planning and zoning, sparking controversy in some quarters at the prospect of a regulatory body guiding how land is used. Forty-five counties house independent planning units; the remaining counties fairly evenly split among having joint planning units, having joint planning but no zoning regulations, and having no planning whatsoever (see Table 6). The governor approached the matter by establishing the Smart Growth Task Force in May of 2001 to assess development patterns around the state and identify particular goals and guidelines for future growth. In short, land use and

TABLE 6
A Planning Patchwork

Counties with:	Number
Independent planning units	45
No county planning	27
Joint planning	26
Joint planning units, but no zoning regulations countywide	22

Source: Kentucky Chapter of the American Planning Association, <http://www.kapa.org/zkyplan.pdf>

development are on the minds of many Kentuckians. Looking across the state, we find a confluence of demographic and economic forces driving changes in our land use. This chapter examines urban growth, changes in population, commuting patterns, housing, Kentucky's rural counties, and the state forests, all with an eye to determining how they will reshape the state's landscape over the coming decades.

URBAN SPRAWL

One of the greatest concerns centers on urban and suburban sprawl, a process by which new development takes place on the fringes of already-developed areas, resulting in urbanization creeping outward, absorbing and fragmenting green space. A 2001 study issued by the University of Kentucky's Center for Business and Economic Research sought to quantify the cost of sprawl by contrasting population growth with expenditure growth for schools, highways, police, and fire services.[88] The study found that from 1987 to 1997, population growth occurred most rapidly in suburban counties surrounding central city counties, and that increases in per capita expenditures for police and fire service in these suburban counties far outstripped per capita spending growth anywhere else in the state (see Table 7). In

TABLE 7
Percentage Growth in Expenditures on Public Services, 1987-1997

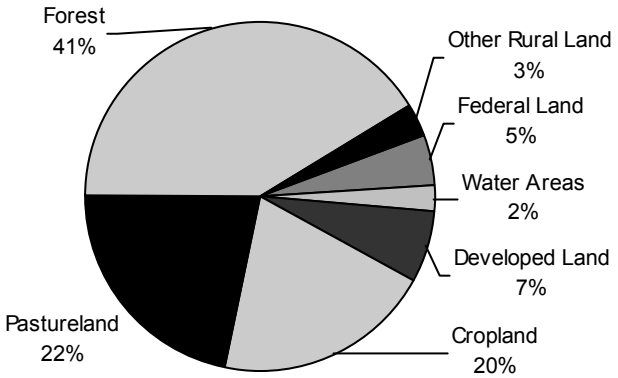
	Mean Percentage Growth in Population or Expenditures Per Capita				
County Type	**Population**	**Police**	**Fire**	**Highway**	**School**
All	7.6%	61.8%	217.0%	66.7%	100.0%
Central City	2.1%	78.1%	51.7%	61.9%	85.1%
Surrounding	18.2%	93.0%	354.0%	47.4%	97.6%
Nonmetropolitan	5.2%	53.4%	191.0%	71.7%	102.0%

Source: Chris Bollinger, Mark C. Berger, and Eric Thompson. Smart Growth and the Costs of Sprawl in Kentucky. 2001.

other words, the cost of these services in the surrounding counties expanded much more rapidly than the tax base. Communities experience a similar budgetary crunch, extending water and sewer lines further and further out of town.[89] Besides environmental and aesthetic concerns, sprawl strains the capacity of public finance, underscoring the necessity for communities to consider how and where they grow.

Kentucky has long been known as "the Bluegrass State," reflecting its reputation for having a lush, rural landscape. But change, quite literally, is on the horizon. The Natural Resources Conservation Service's most recent National Resources Inventory (NRI) reports that developed land constitutes only about 7 percent of the state (see Figure 48).[90] However, this proportion has the potential to balloon in coming years, especially if Kentucky continues converting land to urban uses at the current rate of approximately 109 acres a day (see Table 8). Between 1982 and 1997 the amount of cropland in Kentucky shrank by about 13 percent while developed land increased by nearly 52 percent—the seventh highest rate of increase in the nation (see Figure 49).[91] Not surprisingly, the most extensive urbanization took

FIGURE 48
Land Use in Kentucky, 1997



Source: USDA, Summary Report, 1997 Natural Resources Inventory

place at the three corners of the Urban Triangle. At the current rates of development, Fayette County will consume all land suitable for crop cultivation in 65 years, the tri-county region of Northern Kentucky in 40 years, and Jefferson County in a mere 16 years.[92]

TABLE 8
Rate of Urbanization in Kentucky, 1997

Region	Acres Urbanized Per Day
Western Coalfields	10
Bluegrass	46
Pennyrile	22
Eastern Coalfields	25
Jackson Purchase	6
Kentucky Total	**109**

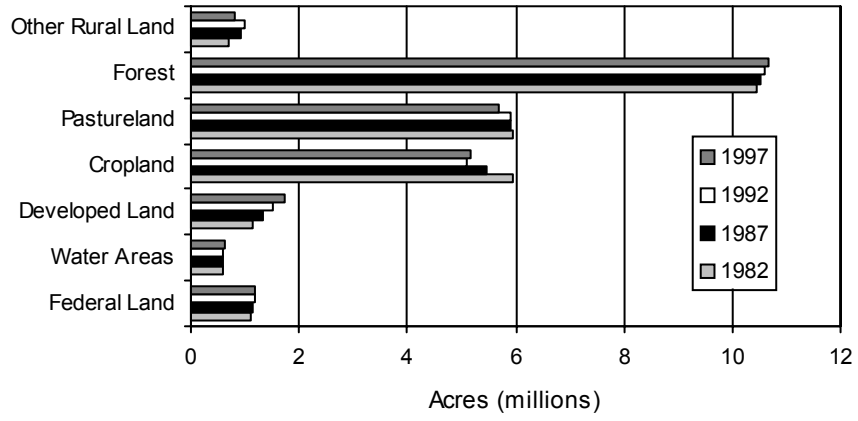
Source: National Resources Inventory (12/2000): Estimates for Urban/Built-up Land and Roads for Kentucky

Of even greater significance than the actual quantity of urbanization are the patterns and locations where it takes place, and the long-term consequences of haphazard development and suburban sprawl. By looking at the overarching trends in how we're using our land and the forces driving those uses, we can gain a sense of how Kentucky's future landscape will look and the implications for the environment, the economy, and the well-being of the populace. A look at the push and pull of the competing needs that guide how communities grow reveals Kentucky's physical changes have been inextricably linked to how the state's people have changed.

POPULATION

For the past decade, Kentucky's population has been in a state of flux, not merely in terms of size but also concerning distribution. The 1990s saw the Commonwealth's population grow from about 3.6 million people in 1990 to a little over 4 million in 2000.[93] Though the state grew as a whole, some areas grew in population faster than others and some actually experienced net losses of residents.

FIGURE 49
Land Use Trends in Kentucky, 1982-1997



Source: USDA, Summary Report, 1997 Natural Resources Inventory

The largest growth occurred in the Urban Triangle and along interstates (see Figure 50). In fact, 15 of the 22 counties whose populations increased by at least 20 percent live in the Triangle, including the state's fastest growing area, Spencer County (73 percent).[94] Conversely, all 14 of the counties that lost population sit in either Eastern or Western Kentucky—10 in the east, 4 in the west—the greatest loss taking place in Harlan County (-9 percent). These are by no means new trends: since 1970 the largest population growth has been in metro areas, particularly in the suburbs (see Figure 51).[95]

Residents relocating from one community to another have influenced these changes in county populations. The 1990s saw sizable numbers of Kentuckians moving out of rural counties in the western and eastern regions of the state and into counties either housing metropolitan areas or adjacent to such counties. It might come as some surprise that Jefferson County, far and away the state's most populous county, actually experienced one of the greatest amounts of net out-migration[96] during this past decade (see Figure 52). However, of the 10 counties with the highest degrees of net *in*-migration, three are contiguous to Jefferson (see Figure 53). Though a number of people moved out of the county, many more commute there for work, in the neighborhood of 74,000 a day. The migration from Jefferson County to Oldham, Bullitt, and Shelby, combined with the large number of people commuting to Jefferson, certainly suggests that at least some portion of those who moved out of the county continue to work there.

One of the most dramatic changes in Kentucky's population has been with regard to age. The 1990s saw Kentucky's youth population grow by about 41,000, but the proportion of Kentuckians under the age of 18 actually shrank—from 25.9 percent in 1990 to 24.6 percent in 2000—and continues to diminish in size relative to the percentage of older residents. Counties in Eastern Kentucky suffered the greatest drops in youth population, some of which actually experienced net *gains* in total number of residents (see Figure 54). Breathitt County, for example, experienced a modest population gain of 3 percent, but still lost 8.8 percent of its under-

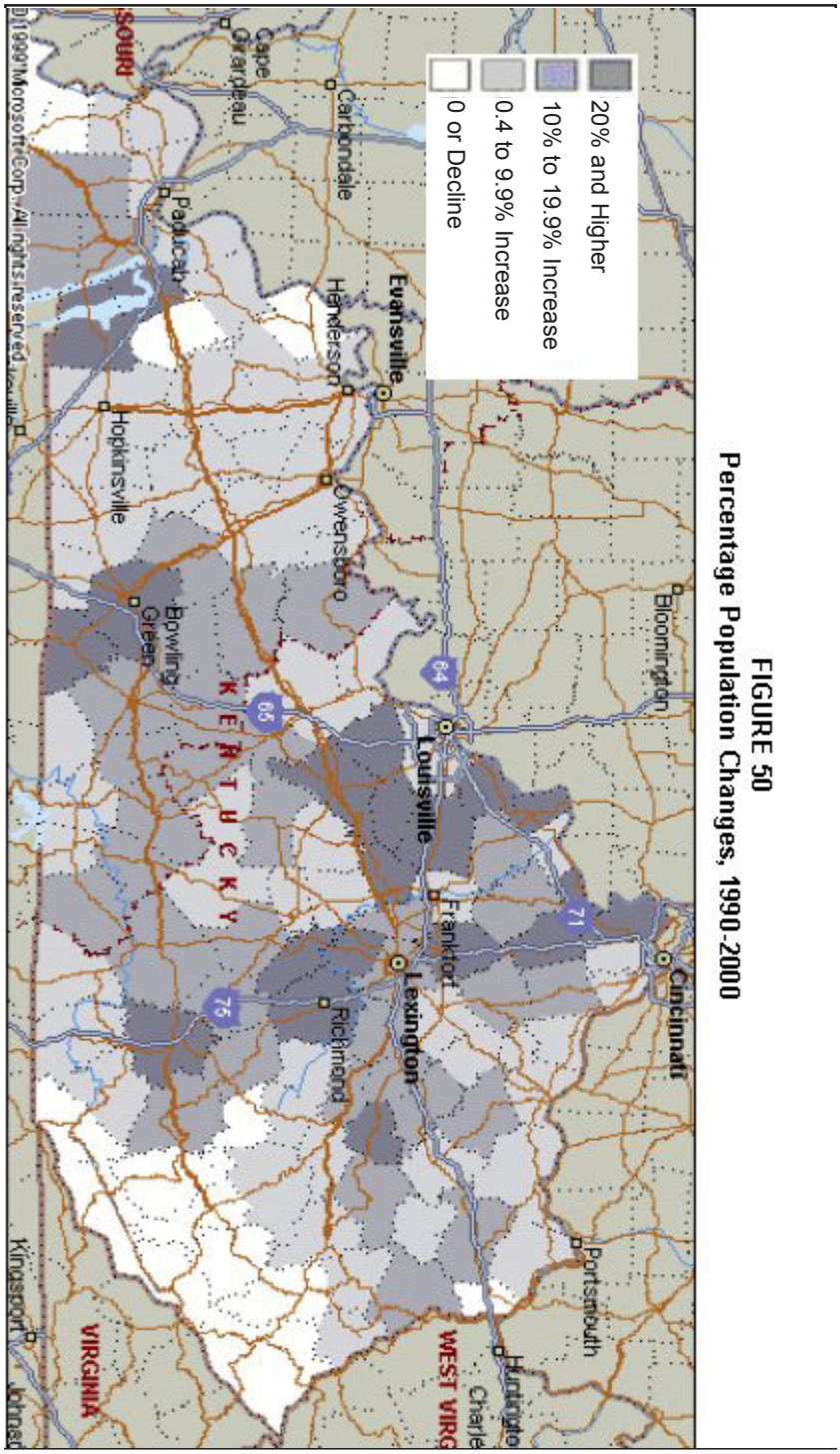
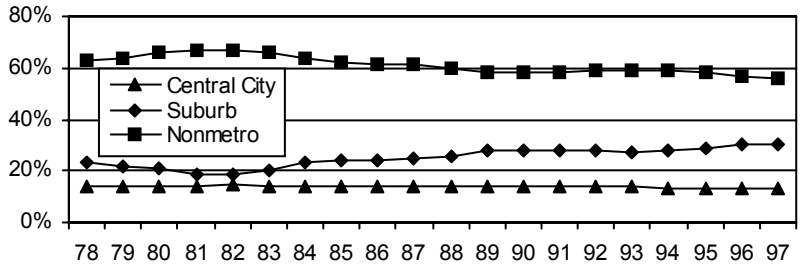


FIGURE 50
Percentage Population Changes, 1990-2000

FIGURE 51
Estimated Distribution of Kentucky's Population



Note: Percentages are based on a 3-year moving average estimated by the Kentucky Long-Term Policy Research Center from Current Population Survey data. Central city is within a MSA, suburb is the balance of the MSA that is not in the central city, and nonmetro is not in a MSA.

18 residents. Though Breathitt experience a dramatic loss of young people, many counties in the area fared far more poorly.

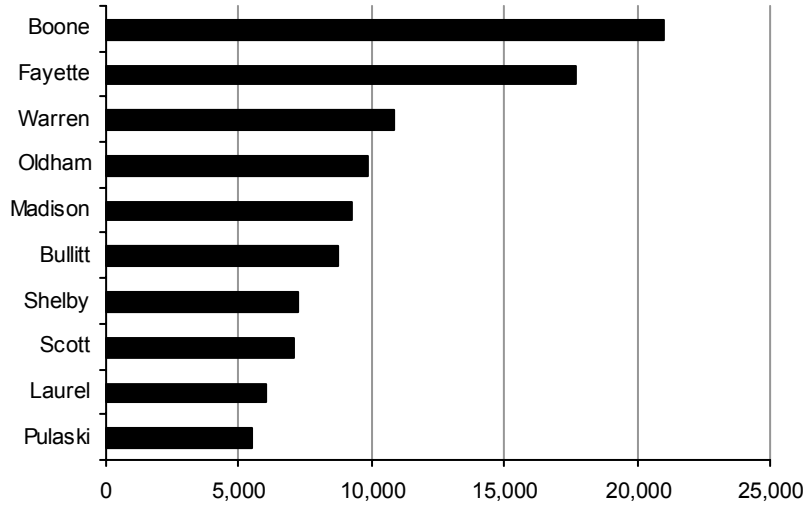
Of the 10 counties that lost the highest percentage of young residents—and Breathitt did not even make the top 10—9 population dropped an alarming 26.2 percent. One of the immediate consequences of these losses has been a decline in the number of students in the school systems. Over the last decade, enrollment in Leslie County schools fell by 25 percent and will likely drop by another 25 percent during the next 10 years. [97] These declines in youth population stem primarily from a combination of lower birthrates and out-migration: people are having fewer children and they are moving to places that hold greater opportunities for jobs and education.

Yet again, the central, urban region of the state fared better than the rural, southeast portion. The top 10 counties for youth population growth can all be found in the Urban Triangle, including Spencer County, whose number of under-18 residents grew by a staggering 73.2 percent. Rather than being the result of soaring birthrates, the growth of the Urban Triangle's young population primarily stemmed from an influx of adults who brought their children with them. The shift toward a younger, suburban population stands to bring a greater demand for development in suburban counties in the coming years, as young people grow up and have children of their own.

COMMUTING

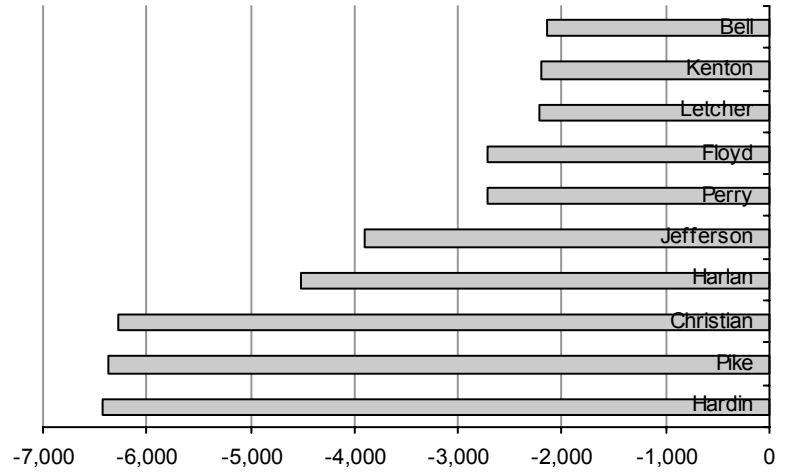
Commuting to and from work plays an increasing role in shaping the state's landscape, particularly at the three corners of the Urban Triangle. Those 74,000 people who drive to Jefferson County to work hail from 89 Kentucky counties; Fayette receives 41,000 commuters from 100 counties; and Kenton and Boone receive 23,000 and 22,000 commuters, respectively.[98] The sheer capacity required of roadways to accommodate so many people has been a key factor in central Kentucky's

FIGURE 52
Kentucky In-Migration, 1990-2000



Source: Kentucky Long-Term Policy Research Center analysis of Census

FIGURE 53
Kentucky Out-Migration, 1990-2000



Source: Kentucky Long-Term Policy Research Center analysis of Census data

rate of urbanization, as old roads need to be widened and new ones built to alleviate traffic congestion. But new and expanded roadways will still have a limited capacity, and the amount of expansion necessary to offset increasing congestion tests the limits of both budgets and the public's tolerance for new construction.[99]

FIGURE 54
Percentage Change in Youth Population (under 18), 1990-2000

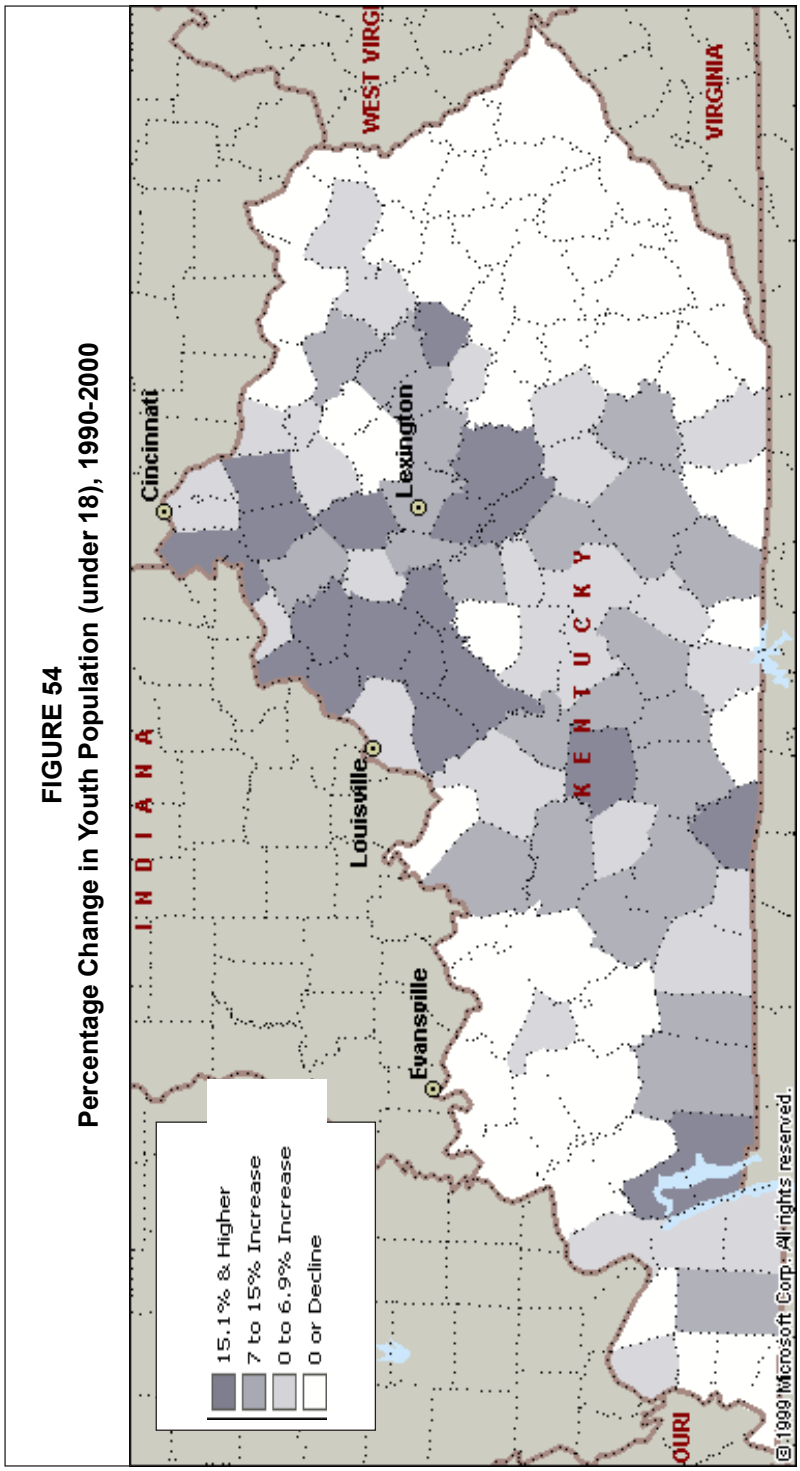
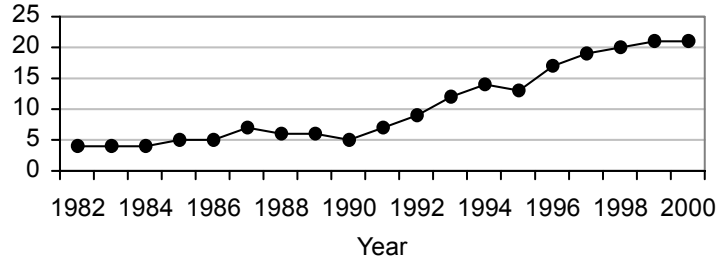
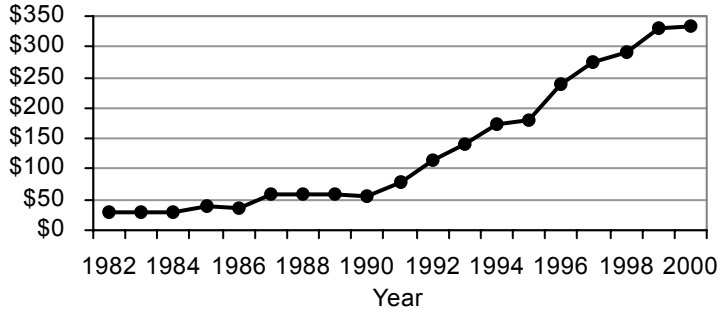


FIGURE 55
Louisville's Estimated Annual Average Hours of Delay
(per capita)



Source: Texas Transportation Institute's 2002 Urban Mobility Study

FIGURE 56
Louisville's Estimated Annual Congestion Cost
(in millions)

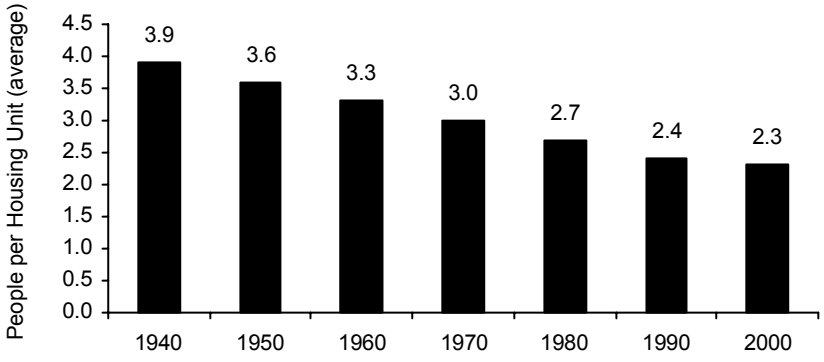


Source: Texas Transportation Institute's 2002 Urban Mobility Study

The way Kentuckians commute to work has only exacerbated these problems. Between 1990 and 2000, the number of workers who drove alone to their jobs increased nearly 20 percent, while the ranks of carpoolers dropped 2 percent, and the number of people using public transportation plummeted 14 percent.[100] Having more people driving to work alone can only increase roadway congestion, but as people work farther and farther from home, public transportation becomes increasingly impractical as a means of commuting.

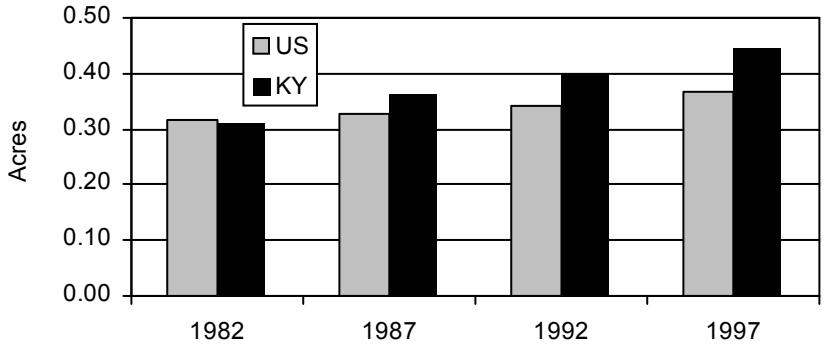
To a certain extent, congestion is inevitable in and around metropolitan areas, by virtue of the sheer number of people going from place to place each day, but alleviating the problem will take more than just additional roads. Louisville, more than any other city in the state, has been hit the hardest when it comes to congestion. In cooperation with the Kentucky Transportation Cabinet, the Texas Transportation

FIGURE 57
Fewer Kentuckians per Household



Source: Kentucky Long-Term Policy Research Center analysis of Census data

FIGURE 58
Developed Land per Person



Source: Kentucky Long-Term Policy Research Center analysis of Census and NRI data

TABLE 9
Kentucky's Major Land Uses and Trends

Land Cover	1983 Acreage (1000's)	1997 Acreage (1000's)	Acreage Change (1000's)	Percentage Change
Cropland	5934.0	5178.2	-755.8	-12.7%
CRP Land	0.0	1.6	1.6	N/A
Pastureland	5959.4	5685.5	-273.9	-4.6%
Forestland	10444.5	10667.0	222.5	2.1%
Federal Land	1096.8	1187.2	90.4	8.2%
Urban/buildup	1145.3	1737.5	592.2	51.7%
Other land	699.6	464.5	-235.1	-33.6%
Water	583.6	611.3	27.7	4.7%

Source: Kentucky NRI data

Institute's *2002 Urban Mobility Study* found that from 1982 to 2000, the mileage of the city's roadways rose about 50 percent, but the annual hours of delay per capita multiplied 500 percent (see Figure 55).[101] This same time span saw an even more dramatic swell in the annual cost of time and fuel wasted due to congestion, from $30 million to $335 million, a tenfold increase (see Figure 56).[102]

HOUSING

The amount of land developed for housing has been rising much faster than the population it houses. As Figure 57 illustrates, for the past several decades the average number of Kentuckians per housing unit has been steadily declining. Since the beginning of the 1980s—a decade during which the size of the state's population remained virtually unchanged—the state's population has increased by about 10 percent, but the number of housing units has grown by about 28 percent.

The 1997 NRI found that for the previous 15 years, the state's Bluegrass region converted land to urban uses at the rate of 46 acres *per day*, far exceeding the second highest rate, the Eastern Coal Field's 25 acres daily (refer to Table 8). During this same 15-year period, the number of developed acres per person in Kentucky increased 43 percent, the second highest increase in the nation, more than two and a half times the 16 percent increase at the national level (see Figure 58). And though the state's population increased by only 6 percent between 1982 and 1997, the amount of developed land swelled by nearly 52 percent.

Table 9 presents Kentucky's land use profiles from 1982 and 1997, and the percentage of change over the period, highlighting the conversion of cropland and pastures to urban uses. Compared to the other 49 states, Kentucky ranks 18th overall in terms of the acreage of prime land developed between 1992 and 1997, averaging about 16,000 per year. But this expansion of urban and suburban territory seems somewhat inevitable given the economic realities of life in rural counties.

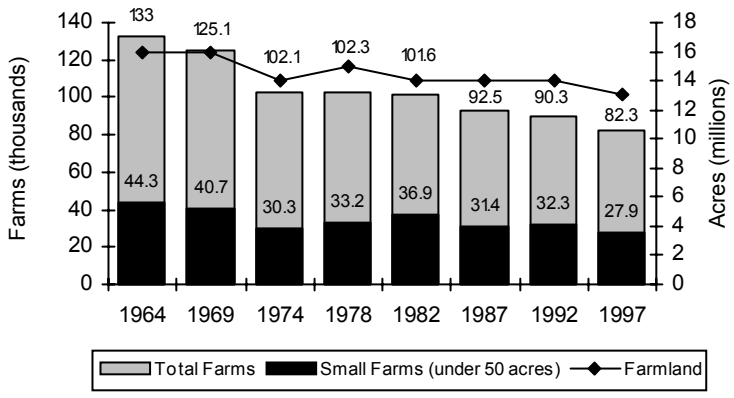
THE RURAL SLUMP

For some time, rural Kentucky has lagged behind the state's urban regions in terms of wage increases, per capita income and earnings changes, and employment growth, and the gap between wages in metro and nonmetro counties has been expanding for over 30 years.[103] Plain and simple, a slumping rural economy cannot help but compel people to move—or at least work—elsewhere.

Those who commute out of rural counties for employment might have the opportunity for higher pay than they do at a job closer to home, but their home communities still miss the income tax paid to the counties where they work. Losing residents to out-migration and income tax revenue to commuting can wither a town's tax base, increasing the challenge to maintain and improve infrastructure and the general quality of life.

A telling sign of the rural economic downturn, both the number of farms and the total acreage of farmland have been steadily sliding for the last 30 years, as seen in Figure 59. From 1992 to 1997, Kentucky ranked 18th nationally for land developed that had been prime farmland.[104] The crumbling of the tobacco market has put the traditional family farm on shaky ground, forcing farmers to sell off land, search for alternate agricultural products, or even find other means of employment.

FIGURE 59
Farms and Farmland in Kentucky, 1964 to 1997



Source: US Census of Agriculture

In an effort to preserve and protect the state's farmland, in 1994 the Kentucky General Assembly created the Purchase of Agricultural Conservation Easement (PACE) Corporation, which purchases the development rights for land currently used for agricultural purposes. All landowners that hold titles to farmland suitable for agricultural uses have the option of applying to PACE for land easements. The corporation assesses the fair market value of the land according to its potential for development, and estimates the value of the land if it remains restricted to agricultural production: the value of the easement will fall between the two amounts. The landowners then use these appraisals as the bases for determining their asking prices, negotiating with PACE over the final amount of the easement. By purchasing the development rights, PACE allows owners of farmland to reap the full financial potential of their land while ensuring the property will not be urbanized. Landowners also have the option of donating development rights to PACE, making themselves eligible for federal and state income and estate tax benefits.

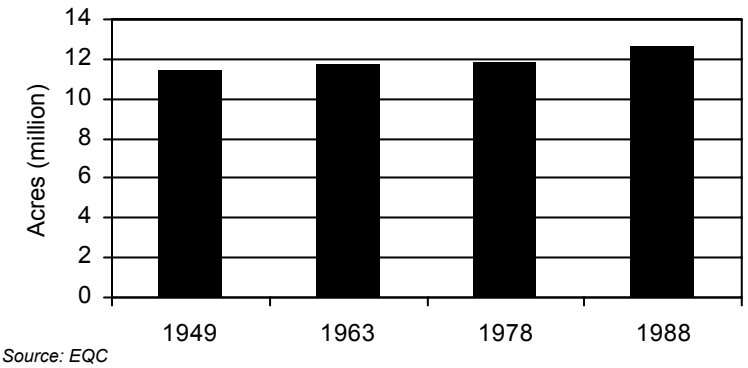
So far, PACE has bought easements for 3,991 acres on 18 farms, totaling roughly $2.9 million; and has received donations of an additional 1,320 acres on 8 farms. All told, the program has preserved 5,311 acres of Kentucky farmland. In the near future, the state could see much more of its farms preserved by PACE, which has received 413 applications from 64 different counties, totaling 74,000 acres.[105] PACE's long-term success will hinge upon the program receiving adequate funding, and on the interest of private landowners in preserving the state's farmland. Other groups, such as the Bluegrass Conservancy and the Kentucky Farm Bureau, also strive to foster the well-being and very presence of farmland. Ultimately, these programs will not be able to conserve *all* the state's farms, and as rural economies continue to struggle, the amount of land devoted to farming will continue to dwindle. But even with a high rate of land being urbanized to accommodate people moving and com-

muting from rural to suburban areas, and in spite of drops in cropland and pastureland, the state's forests have managed, in more ways than one, to grow.

FORESTRY

From 1982 to 1997, the amount of Kentucky's forestland increased by 500,000 acres, now accounting for nearly half of the state's total acreage (see Figure 60).[106] On the surface, this paints a rosy picture of our forestland's health and vitality, but a number of factors—particularly fragmentation and partialization–raise concerns about how Kentucky's forests will fare in the future.

FIGURE 60
Forestland Acreage in Kentucky



Source: EQC

Fragmentation refers to the process by which individual segments of forest become divided into smaller segments, typically the result of landowners selling off portions of their acreage. Private owners currently possess about 93 percent of Kentucky's 12.7 million acres of forestland. That portion of forest is divided among 306,000 owners, averaging about 38 acres per landowner.[107] The problem, here, stems from the sheer logistics of forest management. Kentucky has about 7,673 landowners per state forester, greatly hampering efforts to determine the quality of private forestland management.[108] Complicating matters, less than 10 percent of Kentucky's forestland owners consult foresters about plans they have for their land.[109] The *quantity* of Kentucky's forests may be increasing, but their *quality* becomes harder to monitor, assess, and manage as more and more people own smaller and smaller portions of forestland.[110]

Kentucky's 12.7 million acres of forest do not exist as one single, connected mass of land. Forestland is scattered across the state in unconnected segments, and the conversion of forests to other uses shrinks the size of these portions, sometimes eradicating them altogether. Allowing this process of partialization to continue unchecked could result in a significant, long-term, irreparable loss of forestland in Kentucky, diminishing the state's beauty and damaging its ecosystems.

Similar to PACE's efforts to preserve farmland, the USDA Forest Service's Forest Legacy Program (FLP) purchases and receives donations of forestland conservation easements. In addition to acquiring property, the FLP also works with

states to assist them in constructing conservation plans of their own. The program covers 75 percent of the cost of forestland easements, with the remaining 25 percent of the cost paid for by nonfederal sources. As with PACE, participation is purely voluntary and open only to private landowners. Kentucky has yet to participate in the program, but is at work on its need assessment, and will likely qualify for funding in 2003.

CONCLUSION

Recent history has seen a growth in development, particularly in suburban areas surrounding central cities. Though forests and farmland still dominate Kentucky's landscape, sprawling development continues to fragment forests and consume rural property. Current trends in the population's size, age, location, and commuting patterns suggest an even stronger push in the future to develop land in and around suburban regions. During the 1990s, economics played an essential role in where Kentuckians opted to live and work, and financial factors will remain a driving force in the decades ahead. However, as more of the state becomes urbanized, the debate over the best approach to growth will only intensify.

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[88] Chris Bollinger, Mark C. Berger, and Eric Thompson, "Smart Growth and the Costs of Sprawl in Kentucky," Center for Business and Economic Research, University of Kentucky, 9 April 2001.

[89] Sierra Club, "Sprawl Costs Us All," 2000 <http://www.sierraclub.org/sprawl/report00/>.

[90] Every five years, by way of congressional mandate, the U.S. Department of Agriculture's Natural Resource Conservation Service (NRCS) conducts the National Resources Inventory (NRI), a statistical survey of 800,000 sample sites around the 50 states and some U.S. territories. The NRI seeks to provide consistent, scientifically sound data about land use and environmental conditions, for use by policymakers, government agencies, researchers, and the average citizen. The methods of data collection and analysis have been continually evolving, along with the tools and technology used for the NRI, in pursuit of maximum accuracy. Besides collecting new data, NRCS has re-evaluated and updated NRI results from 1982 and 1987, enabling statistical analysis of findings from 1982 to 1997.

[91] NRCS, "National Resources Inventory: Highlights for Kentucky," <http://www.ky.nrcs.usda.gov/nri/highlights/change1.htm>.

[92] NRCS, "National Resources Inventory (December 2000): Estimates for Urban/Built-up Land and Roads for Kentucky."

[93] U.S. Census Bureau. Also, refer to Michael Price's chapter in this volume, "One Million More."

[94] Chris Poynter, "State's Urban Areas Grow," *The Courier-Journal* 21 March 2001: A1.

[95] U.S. General Accounting Office (GAO), *Local Growth Issues–Federal Opportunities and Challenges*, September 2000.

[96] Net migration refers to the difference between the number of people who move out of a place and the number that moves into that place. For example, more people moving out than moving in constitutes net out-migration.

[97] Andy Mead and Linda J. Johnson, "Subtraction Problem: Not Enough Students," *Lexington Herald-Leader* March 2001: A10.

[98] Kentucky State Data Center, University of Louisville, *1990 Commuting Patterns, Kentucky,* April 1993.

[99] Texas Transportation Institute, "2002 Urban Mobility Study: The Short Report … for Readers Who Are Not Stuck in Traffic," 20 June 2002 <http://mobility.tamu.edu/ums/study/short_report.stm>.

[100] U.S. Census Bureau data.

[101] Texas Transportation Institute, "The Mobility Data for Louisville, KY-IN," <http://mobility.tamu.edu/ums/study/mobility_data/tables/louisville.pdf>.

[102] For a detailed explanation of the Texas Transportation Institute's methodology, see: <http://mobility.tamu.edu/ums/study/methods/congestion_cost.pdf>.

[103] See, for example, Eric Scorsone's chapter, "Still Left Behind," in this volume.
[104] American Farmland Trust, "Farming on the Edge," 3 Oct. 2002 <http://www.farmland.org/farmingontheedge>.
[105] Kentucky Department of Agriculture, "PACE: Kentucky's Farmland Preservation Program" <http://www.kyagr.com/enviro_out/pace/pace.ppt>.
[106] Kentucky Environmental Quality Commission (EQC), *State of Kentucky's Environment 2000-2001*, June 2001.
[107] EQC.
[108] EQC.
[109] Natural Resources and Environmental Protection Cabinet, *Kentucky's Forest Resources: Our Growing Future* Dec. 1995.
[110] Jason P. Dedrick, Troy E. Hall, R. Bruce Hull IV, and James E. Johnson, "The Forest Bank: An Experiment in Managing Fragmented Forests," *Journal of Forestry* 98.3 (2000): 22-25.

NO ONE LEFT BEHIND?

TRENDS IN EDUCATIONAL ATTAINMENT AND ACHIEVEMENT

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The so-called Next Economy highlights the importance of education for individuals and society. In this fast-paced, technological, and knowledge-based economy, the low educational attainment and achievement levels of Kentucky's population put the state at risk of being left behind. This fact has not escaped the notice of Kentucky's policymakers and citizens. The long-held educational values of the few have gained stature among the many and manifested themselves in statutory reforms over the past decade. Reforms in primary and secondary schooling took place at the beginning of the 1990s, while those at the postsecondary level appeared at the end of the decade. As these reforms transform Kentucky's educational systems, a primary concern is how they will affect outcomes such as attainment and achievement. This chapter tracks how educational levels changed among Kentuckians and examines trends in indicators of achievement throughout the past decade. Educational attainment refers to the levels of schooling a person attains, such as a high school diploma or a four-year college degree. Usually measured by standardized test scores, educational achievement refers to how well students perform academically.

EDUCATIONAL ATTAINMENT

Ranking at or near the bottom in the percentage of its adult population with at least a high school diploma, Kentucky has consistently lagged the rest of the country in terms of educational attainment. The education reforms of the 1990s were implemented in part to close those gaps and increase the level of educational attainment throughout Kentucky's population. Data from the 1990 and 2000 Censuses show us that although deficits still exist, the Commonwealth has made great strides in the past decade in overcoming these persistent shortfalls and instilling in its citizens a new appreciation for education.

Table 10 shows the percent of the adult population for the United States and Kentucky completing education at the high school, four-year college, and graduate

TABLE 10
Educational Attainment of Persons 25 Years Old and Older, Kentucky and the U.S., 1990 and 2000

	1990		2000	
Percent Completing:	**US**	**KY**	**US**	**KY**
High School	75.20	64.6 (49)	80.4	74.1 (49)
4 Years of College	20.30	13.6 (48)	24.4	17.1 (47)
Graduate or Professional School	7.30	5.9 (35)	8.9	6.9 (37)

Note: Numbers in parentheses are Kentucky's national ranks among the states.
Source: US Census Bureau

or professional levels for 1990 and 2000. As shown, the percentages for Kentucky have grown at all three levels. However, as can be seen by comparison with U.S. figures, we still lag the nation in attainment. In addition, we have not made much progress among the states, ranking 49th in both years in the percent of Kentucky adults 25 years old and older completing high school and 48th and 47th in 1990 and 2000, respectively, in the percentage completing four years of college. Kentucky's best ranking of 37th in 2000 occurs at the graduate or professional degree level with 6.9 percent of Kentucky adults. Although this is a decline in rank from 35th in 1990, the percentage increased from 5.9 percent.

Upon further analysis by age, the data for the younger age groups reveal the growing appreciation for the value of education in Kentucky in the latter part of the century. Our younger cohorts have made considerable progress in the past decade in educational attainment. The percent of Kentuckians age 25 to 34 with at least a high school diploma or equivalent increased from 79.2 percent in 1990 to 84.2 percent in 2000 (see Table 11). This increase was large enough to elevate Kentucky's national ranking among the states from 46th in 1990 to 35th in 2000. In addition, 84.2 percent slightly exceeds the national average of 83.9 percent, marking the first time that Kentucky has exceeded the national average of high school attainment for this age group.[111] This age group also made strides in attainment at the college level with a 53 percent increase in those completing four years of college.

Progress also occurred for the next age group, those Kentuckians 35 to 44 years old. The percentage of those with at least a high school diploma or equivalent and a bachelor's degree in this age group increased over the decade and elevated the state's rank in both categories. In addition, this age group now boasts a high school completion rate of 82.3 percent, compared with 79.2 percent in 1990 for the age group of 25 to 34 years old, in which these people would have been in 1990. These gains may be partially attributable to in-migration of persons with this level of educational attainment, but it may also be due to an increasing number of GED recipients. Since 1998, the number of people awarded a GED in the state increased from 11,128 to 14,651.[112]

TABLE 11
Percent and Rank of Kentucky Adults, by Educational Attainment and Age Group, 1990 and 2000

Age	25-34	35-44	45-64	65 and Older
	Percent (Rank)	Percent (Rank)	Percent (Rank)	Percent (Rank)
At Least a High School Diploma or Equivalent				
1990	79.2 (46)	78.8 (49)	59.0 (50)	37.1 (50)
2000	84.2 (35)	82.3 (44)	75.2 (49)	50.4 (50)
At Least a Bachelor's Degree				
1990	13.6 (48)	15.5 (47)	18.9 (45)	11.9 (49)
2000	20.8 (45)	18.1 (46)	18.0 (49)	10.2 (48)
A Graduate or Professional Degree				
1990	5.9 (35)	4.2 (30)	5.7 (47)	3.0 (41)
2000	5.6 (30)	6.8 (34)	9.1 (38)	4.4 (46)

Source: US Census Bureau

Data for the two remaining older age groups reflect Kentucky's traditionally low rates of educational attainment at the high school level and higher. Less than 40 percent of Kentuckians 65 years and older had at least a high school diploma or equivalent in 1990, while approximately half had attained this level in 2000, placing Kentucky last among the states. Kentucky also ranked last or nearly last in the percentage of Kentuckians 45 to 64 years old with at least a high school diploma in 1990 and 2000, respectively. These age groups did not perform much better relative to the remaining states in attainment of a college education. The percentages for both age groups dropped as did the rank for those 45 to 65 years old, and it rose by one for those 65 years old and older.

The most promising data are the percentages and rankings of Kentuckians attaining a graduate or professional degree as compared with the rest of the nation. Although the younger age group appears to have lost ground in the percentage of persons with a degree at this level, the state ranking climbed from 35th in 1990 to 30th in 2000. The remaining age groups saw increases in these percentages over the decade. The percent of Kentuckians 35 to 44 years old with a graduate or professional degree increased 62 percent from 1990 to 2000 although the state rank dropped from 30th to 34th. The largest percentage-point increase occurred for those 45 to 64 years old, increasing 3.4 percentage points and elevating Kentucky from 47th to 38th in the nation. The oldest group saw an increase in this percentage although the ranking declined.

Analysis by gender reveals differential values between men and women regarding educational attainment. Table 12 shows educational attainment rates by gender and age group for Kentucky adults in 2000. A consistent pattern emerges well into the mid-40s age range, in which educational attainment rates for women exceed those for men at all levels of education. In fact, at the high school diploma or equivalent level, the attainment rates for women exceed those for men at all age groups. For the remaining three levels of attainment shown here, the proportion of

TABLE 12
Percent of Kentucky's Adult Population, by Educational Attainment, Age, and Gender, 2000

At Least...	High School Diploma or Equivalent	Some College Experience or Two-Year Degree	Bachelor's Degree	Graduate or Professional Degree
Age 18-24				
Men	71.7	36.6	4.7	0.4
Women	78.3	48.6	7.0	0.5
Age 25-34				
Men	82.2	46.0	19.1	4.9
Women	86.1	55.1	22.5	6.3
Age 35-44				
Men	79.2	41.0	17.8	6.4
Women	85.3	49.3	18.4	7.2
Age 45-64				
Men	73.4	41.2	19.7	9.1
Women	76.8	39.7	16.4	9.0
Age 65 and				
Men	50.2	26.2	12.9	5.9
Women	50.5	21.7	8.4	3.4

Source: US Census Bureau

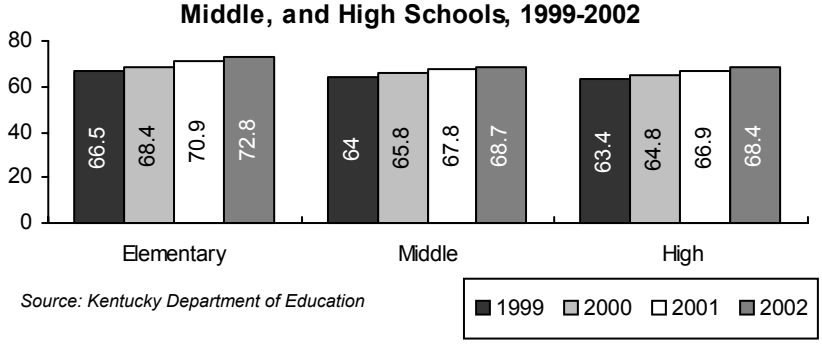
women completing their education at these levels is greater than the proportion of men for all three of the youngest age groups. One implication of this is that men may find themselves left behind in the job market for more skilled and technical jobs if they do not become more receptive to the message that education matters.

A closer analysis of the two youngest age groups, those 18 to 24 years old and those 25 to 34 years old, highlights a disturbing trend. Our youngest age groups are *not* more educated than their older counterparts. The high school diploma or equivalent attainment rates for men and women in the youngest age cohort are 71.7 percent and 78.3 percent, respectively, compared with 82.2 percent for men and 86.1 percent for women 25 to 34 years old. If the increase in the percentage of the older cohort is attributable to an influx of persons in that age category who have attained at least a high school diploma or equivalent, this implies that Kentuckians are still lagging behind in terms of attainment. If the increase is due to a greater number of GED recipients, then Kentucky may be inefficiently using its resources, expending them once to educate those who drop out, then again years later to prepare them to take the GED exam. In either case, these results do not bode well for the state and its performance in completion of secondary education among Kentuckians.

EDUCATIONAL ACHIEVEMENT

Educational achievement helps us measure the quality of the education being delivered to a growing number of Kentuckians. Testing students in specified core content areas remains the standard to measure educational achievement. Throughout elementary, middle, and high school students take several tests that are designed to measure their progress. Kentucky's performance-based testing system, the Commonwealth Accountability Testing System (CATS), first implemented in 1999, enables the state to link its assessment system to curriculum accountability. This system sets high standards of achievement, assesses how well students are meeting these standards, and holds schools accountable. Figure 61 shows the statewide scores for all students in Kentucky at the elementary, middle, and high school levels since 1999.

FIGURE 61
Kentucky Accountability Index for Elementary, Middle, and High Schools, 1999-2002



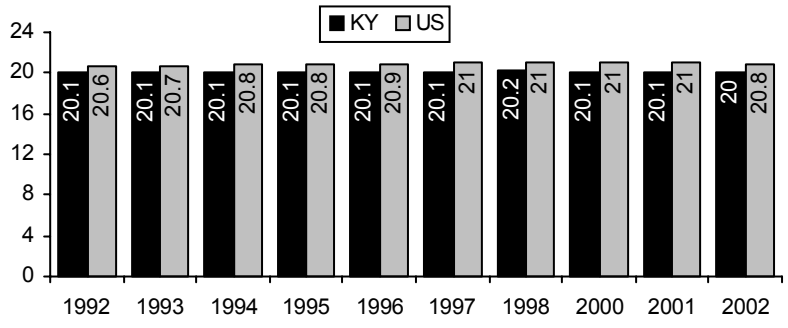
Source: Kentucky Department of Education

The accountability index is a weighted-scale score that combines academic measures, which are based on test results, and nonacademic measures, such as attendance rates, to give an overall assessment of achievement by Kentucky students. The increase in the index for each year since 1999 indicates steady progress. The statewide goal is for all schools to reach a score of 100 by the year 2014, and two-year goals have been set to ensure that schools are on track to meet the target score by that time. Although the indexes have been increasing each year, the statewide accountability index for the elementary school system was the only one to achieve and surpass its 2002 goal of 72.1 with a score of 72.8. Both the middle school and high school scores fell short in this year. The goal for the middle school index was 69.9 in 2002 and the achieved score was 68.7. For the high school level the actual index was 68.4 while the goal was 69.2. In some instances, schools improved their actual test scores but were penalized for nonacademic factors. Persistent, high dropout rates among some Kentucky high schools contributed to the denial of rewards.[113] The statewide dropout rate has ranged between 4.9 and 5.5 percent since the 1992-

1993 school year. CATS penalizes schools that have a 5.3 percent or higher dropout rate.

Unfortunately, these high school results are not entirely surprising. Many educators are concerned with the slow rate of reform in high Kentucky schools.[114] Despite the best efforts of many educators to counter it, high school students often display an apathetic attitude, especially during the senior year. This apathy may have con-

FIGURE 62
ACT Average Composite Scores, Kentucky and the U.S.



Source: ACT, Inc.

tributed to the slight decline in the composite ACT score for Kentucky in 2002 (see Figure 62). This test is not compulsory; rather test takers are self-selected and therefore represent students planning to attend college. With fewer students taking the exam than the previous year, the expectation would be that the score would rise rather than fall. But results were the opposite of expectations. Scores fell from 20.1 in 2001 to 20 in 2002. The national score also fell, but this drop was attributed to the larger number of test takers nationally in 2002. The decline in Kentucky, while small, was particularly worrisome because these results prompt concerns about the correlation of Kentucky's high school curricula to ACT standards, and thus to the preparation of Kentucky's students for college.

For interstate comparison of Kentucky's student performance, we turn to the National Assessment of Educational Progress (NAEP) math and reading exams (see Table 13). Also known as "the Nation's Report Card," NAEP is the only nationally representative and continuing assessment of what America's students know and can do in various subject areas.[115] The 1998 results are promising. They show that the percentage of Kentucky students reading at the basic level has surpassed the national average for both grades four and eight. At the proficient level, the percentage of fourth graders equals the national average. The data on math skills show the share of Kentucky eighth graders at or above the basic level in 2000 nearly equal to the national average, a leap in progress since 1990. Gaps persist, however, for fourth and eighth graders who score at or above the proficient level in math. Fourth graders made no progress in achievement at the basic level in math

TABLE 13
NAEP Math and Reading Test Results, Grades 4 and 8, Kentucky and the U.S., Selected Years

	Percent at or Above Basic		Percent at or Above Proficient	
	KY	US	KY	US
1992 Grade 4 Reading	58	60	23	27
1994 Grade 4 Reading	56	59	26	28
1998 Grade 4 Reading	63	61	29	29
1998 Grade 8 Reading	74	72	29	31
1992 Grade 4 Math	51	57	13	19
1996 Grade 4 Math	60	62	16	22
2000 Grade 4 Math	60	66	17	24
1990 Grade 8 Math	43	51	10	15
1992 Grade 8 Math	51	56	14	20
1996 Grade 8 Math	56	61	16	23
2000 Grade 8 Math	63	64	21	26

Source: National Center for Education Statistics

from 1996 to 1998 and improved only slightly in the percentage of those qualifying as proficient in this subject area.

SUMMARY AND CONCLUSION

The data show that Kentuckians have much to celebrate on the education front but that other areas still need work and that the state must remain vigilant in its efforts to provide quality, lifelong education for all its citizens. Kentuckians can celebrate the first-ever rise above the national average in the percent of young adults 25 to 34 years old with a high school diploma. They can also applaud the state's elementary schools for staying on track to reach their goal of a score of 100 in the statewide accountability index by the year 2014. It is also encouraging to see the older adult population pursue education at the graduate and professional level and to recognize Kentucky's relatively good standing in this area compared with the rest of the nation. The state can also take pride in the efforts of educators at the primary level, whose fourth and eighth grade students are outpacing the rest of the nation in reading at the basic level.

Despite the considerable gains Kentucky has made in educational attainment and achievement over the past decade, some areas need improvement. Although we have made great strides in attainment at the high school level, we still rank at or near the bottom for attainment of a four-year college degree. In addition, men are lagging behind women in educational attainment, which could put them at risk of being left behind in the job market. Accountability indexes and ACT test scores indicate a slowness to change among our high schools, which could impede their student's

transition to college. The persistent dropout rates and smaller rates of high school educational attainment among our very young adults also suggest slow adoption of reform and could result in double work as we re-educate these young people later.

In short, the data provide evidence of a change here in attitudes towards education and some success in improving educational outcomes. But persistent gaps remain. While we are making great strides in many areas, we continue to lag the nation in others, including attainment at the four-year, college-degree level and achievement of our primary students at the proficient level in reading and math. Considering the low point from which the state began in educational attainment and achievement when it embarked on a path of reform, Kentucky has come a long way in rectifying past problems, but this same starting point also leaves Kentuckians with much ground to make up to be on par with the rest of the nation.

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[111] Chris Kenning, "Census: Kentucky Gains in Education," *The Courier-Journal* 25 Sept 2002: A1.
[112] Kenning A10.
[113] Linda B. Blackford and Linda J. Johnson, "CATS Scores: Most Schools Do Better, but Dropouts Block Rewards for Some," *Lexington Herald-Leader* 20 Sept 2002: A1.
[114] Charles Wolfe, Associated Press, "ACT Scores Should Have Gone Up, Not Down," LexisNexis (online subscription research service), 9 Sept. 2002, 8 Nov. 2002, <http://www.nexis.com/research/search/submitViewTagged>.
[115] The results of this test are not included in the computation of the CATS Accountability Index.

OPPORTUNITY AT RISK

EQUITY IN ACCESS TO HIGHER EDUCATION

By Michal Smith-Mello
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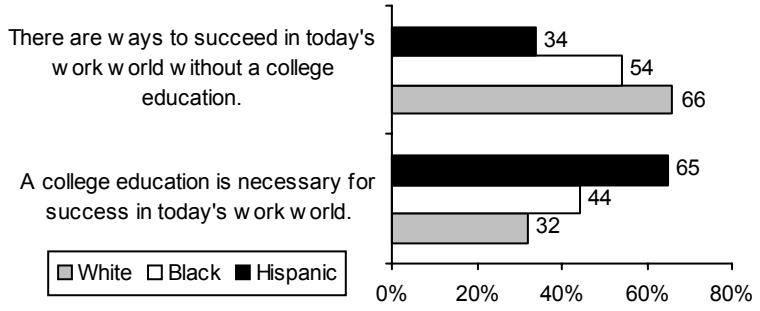
Because Kentucky's future prosperity hinges in large part on a more educated populace, the state must both attract increasing numbers of educated citizens and, at the same time, encourage more Kentuckians of all ages to pursue higher education. To achieve the latter goal and thus make the state more attractive for other educated people, it will be necessary to overcome the growing perception of higher education's exclusivity. Merely an educated guess just a few short years ago, a stream of reports from organizations and individual researchers have questioned the accessibility of higher education and the increasingly difficult access to this path out of poverty. Researchers consistently point to steadily increasing tuition rates that have outpaced inflation and wages, widening gaps between college costs and financial need, rising debt among students, and intensifying competition among institutions that have upped the financial ante for students of "merit," to the likely exclusion of students in need. As a result, it is argued, access to higher education, the very key to economic and social opportunity in the United States, may be at risk. What Longanecker calls "a long tradition of subsidizing public institutions in a way that assists advantaged students more than less-advantaged students"[116] is worsening, many conclude. In a disproportionately poor state such as ours, these changes and the perceptions they engender among low-income families and potential first-generation college students could have profound implications for the future.

PUBLIC PERCEPTIONS

A 2002 review of research about public opinion on higher education found that a college education has assumed the level of importance a high school diploma once held in the national consciousness. In short, Americans understand that opportunity and education have become inextricably linked.

Specifically, a review of survey research conducted by Public Agenda for the National Center for Public Policy and Higher Education found that 84 percent of Americans believe it is extremely (37 percent) or very (47 percent) important to have a college degree to get ahead.[117] An even higher percentage of Americans (87 percent) agree that a college education has assumed a level of importance equal to that a high school diploma once held, and 77 percent believe that getting a college education is even more important now than it was just 10 years ago. What's more, 62 percent of the parents of high school students say it is "absolutely necessary" that their child get a college education. Among those who said they did not go to college, two thirds expressed the wish that they had done so, and nearly as high a proportion (62 percent) of those who did not go to college believe that having done so would have made a significant difference in their standard of living. Disproportionately disadvantaged Hispanic and African-American parents of high school students, however, are more likely to view a college education as a necessity in today's work world than the general population and than white parents (see Figure 63). Indeed, 65 percent of Hispanic and 44 percent of African-American parents say a college education is necessary for a person to succeed in today's work world, compared with 32 percent of white parents and 31 percent of the general population.[118]

FIGURE 63
Opinions of U.S. Parents of High School Students on the Importance of College in Labor Market Success by Race and Ethnicity, 2002



Source: National Center for Public Policy and Higher Education

While the vast majority of Americans view a college education as important, two thirds of all respondents say it is possible to succeed without one. White high school parents are far more likely to believe that there are ways to succeed without a college education (66 percent) than African-American parents (54 percent) or Hispanic parents (34 percent).[119]

This review of public opinion research also found that Americans are split on whether the cost of college is worth it: 47 percent believe that a college graduate gets enough out of an education to justify an expense of anywhere from $7,000 to

$18,000 a year while another 40 percent believe the expense cannot be justified,[120] a significant disjunction between what so many parents believe is a necessity and their perception of it as a possibility. Importantly, 69 percent of the parents of high school students, who most strongly influence their children's perceptions, say they are worried about their ability to afford their children's college education.[121] Similarly, 70 percent of Americans believe that higher education is being priced out of the reach of the average family. By comparison, only 44 percent say a house is priced out of reach.[122]

In Kentucky, a 2000 survey of high school students conducted for the Kentucky Long-Term Policy Research Center by the University of Kentucky (UK) Survey Research Center found that only small portions of *college-bound* high school students did not view cost as an obstacle. Only 20 percent of those students who reported that they would attend a four-year public Kentucky university and 21 percent who said they would attend a four-year private school in Kentucky said cost was not an obstacle. Moreover, only 11 percent of those who reported that they would attend the Kentucky Community and Technical College system, the lowest-cost educational alternative for college students in the state, said cost was not an obstacle.[123] If those who are planning to attend college see cost as an obstacle, it is likely that others do as well. Such perceptions may discourage precisely those who could begin a reversal of Kentucky's legacy of undereducation and poverty—low-income, first-generation students.

TUITION COSTS

Longitudinal studies have shown that parental attitudes about college costs and about the need to prepare adequately for college strongly influence young people's perceptions of the affordability of college and their readiness to succeed as college students.[124] Moreover, rising tuition costs clearly influence the perceptions of heads of households, who must weigh the cost of education among many other responsibilities. But, given a declining population of youth, these are precisely the students Kentucky must attract to its colleges if it is to achieve long-range goals for college enrollment and a more educated populace.

Nationally, between the 2001-02 and the 2002-03 academic years, the annual cost of tuition rose an average of 9.6 percent or $356 at four-year public colleges and universities and at a slower pace but significantly higher cost at private colleges and universities, 5.8 percent or $1,001, at the 4,000 schools associated with the College Board, which owns and administers the SAT college admissions test.[125] Two-year public and private colleges reported similar rates of increase, 7.9 percent ($127) and 7.5 percent ($690), respectively.[126] Moreover, as many higher education researchers have observed, like most tuition hikes, these have come at one of the worst economic times for families and individuals, as the economy remains in a slump, wages and employment have stagnated, and savings have been severely eroded by stock market losses.[127]

Here in Kentucky, postsecondary institutions of all types also steadily raised tuition between 1990 to 2002 at rates comparable to those seen at the national level. In current dollars, which reflect the effects of inflation, the average annual rate of tuition increase was 10.63 percent at four-year public institutions, 9.25 percent at

at four-year private colleges, and 9.7 percent at its two-year public colleges.[128] During this time, tuition nearly doubled at the state's public four-year institutions, rising at a rate of 5.4 percent a year, from $1,180 in 1990 to $2,010 in 2002 (see Table 14.)[129] The state's two-year public colleges experienced a slightly higher rate of increase at 6.1 percent annually, as tuition rose from $600 in 1990 to $1,077 in 2002.[130] At four-year private institutions, tuition rose at a pace of 4.9 percent a year, as the cost rose from an average of $4,855 in 1990 to $7,928 in 2002.[131] Another anticipated round of budget cuts could jeopardize funding for the state's public higher education institutions and financial aid programs and, in turn, create budget shortfalls that colleges and universities have historically closed, in part, through tuition hikes.

TABLE 14
Inflation-Adjusted Tuition Rates, by Type of Institution, Kentucky, 1990-2002
(in constant 1990 dollars)

	Tuition Rates	
Institution Type	**1990**	**2002**
Four-Year Public	$1,180	$2,010
Four-Year Private	4,855	7,928
Two-Year Public	600	1,077
Two-Year Private	3,230	4,697

Source: Kentucky Higher Education Assistance Authority

Nationally and locally, last year's tuition increase alone far outpaced the less than 2 percent increase in consumer prices and urban wages.[132] Moreover, tuition and fees represent only a fraction of the overall expenses college students must meet. They also include books and supplies, housing, food, transportation, and clothing. For example, students who paid their own room and board during the current school year shouldered yearly costs amounting to a national average of $10,458 if attending a less costly two-year institution while residents at four-year institutions faced an average cost of $27,695 nationally.[133]

In terms of affordability, Kentucky's public and private colleges are still rated as good buys. Indeed, in spite of a declining grade on its biennial report card on higher education, Kentucky remains in good standing in regard to the share of family income needed to attend a community college, the National Center for Public Policy and Higher Education notes. Nevertheless, the Center gave Kentucky a "C" in affordability in 2002, down from the "B" it earned in 2000, largely because other states have made greater strides in improving access.[134] The assessment, however, reportedly did not take into consideration the Kentucky Educational Excellence Scholarships (KEES) which give cash awards based on high school grade-point averages.[135]

In an analysis of tuition and fee trends here, the Kentucky Higher Education Assistance Authority (KHEAA) reports that average tuition and fees for public institutions in the state were 37.3 percent lower for two-year colleges and 27.5 percent for four-year colleges than the national averages and 21.4 percent (two-year) and 39.6 percent (four-year) lower for private colleges.[136] However, as KHEAA notes, the statistic for two-year colleges is an "artifact" that predates the consolidation of technical schools and community colleges.[137]

As shown in Table 15, KHEAA found that between 1990 and 2002, tuition and fees rose a total of 70.3 percent at Kentucky's four-year public universities in con-

stant dollars and 79.5 percent at its two-year public colleges.[138] At the same time, median household income in the state rose at a rate of 2.8 percent a year for a total increase of 39.3 percent in constant dollars,[139] well below the increases in tuition seen at Kentucky's public universities and colleges.

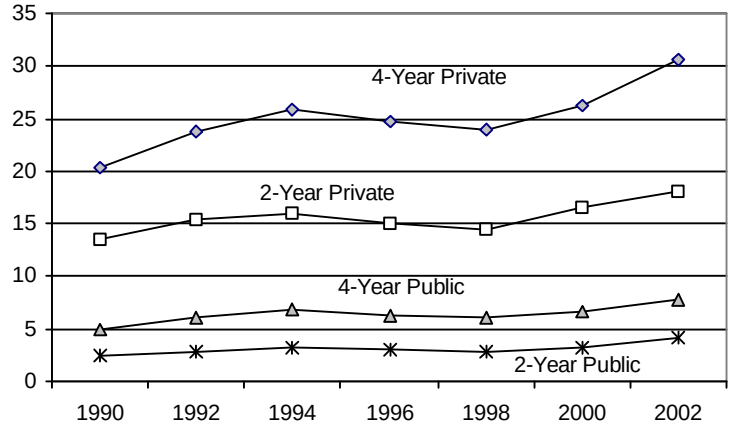
Overall, KHEAA concludes that the rate of increase between 1990 and 2002 "has very significant implications for the affordability of higher education for many citizens of Kentucky"[140] because the rates of increase have vastly outpaced increases in median household income. As shown in Figure 64, KHEAA's analysis found that, as a percentage of median household income, the median cost of a year's tuition and fees has risen sharply. For example, median tuition and fees at a four-year public institution rose from 4.9

TABLE 15
Rate of Change in Median Tuition and Fees, by Type of Institution, and Median Household Income, Kentucky, 1990-2002
(in constant 1990 dollars)

Institution Type	Percent Change	Average Annual Percent Change
2-Year Public	79.5	6.1
4-Year Public	70.3	5.4
2-Year Private	45.4	3.5
4-Year Private	63.3	4.9
Median Household Income	39.3	2.8

Source: Kentucky Higher Education Assistance Authority

FIGURE 64
Median Tuition and Fees as a Percentage of Median Household Income, by Institution Type, Kentucky, 1990-2002



Source: Kentucky Higher Education Assistance Authority

percent of median household income in 1990 to 7.8 percent in 2002.[141] Importantly, constant dollars reflect the eroding effects of inflation: the 2002 median household income, for example, changes from $36,068 in current dollars to $25,900 in constant dollars, reflecting far weaker purchasing power than current data suggest.[142] "Moreover, for one half of the households in the state, those below the median household income, the option of sending one person to college or vocational school for one year appears even starker,"[143] KHEAA reports.

SHORTFALLS IN FINANCIAL AID

As a matter of budget policy but not necessarily good social policy, it is far easier for Congress to appropriate loan funds rather than grant funds. Thus, we have gradually shifted away from grants and toward loans as the major way the federal government supports higher education. As a result, significant evidence suggests that the nation's financial aid system no longer adequately meets the needs of the nation's poorest students, regardless of their qualifications for college, and thus, as the congressional Advisory Committee on Student Financial Assistance concludes, discourages many from pursuing higher education.

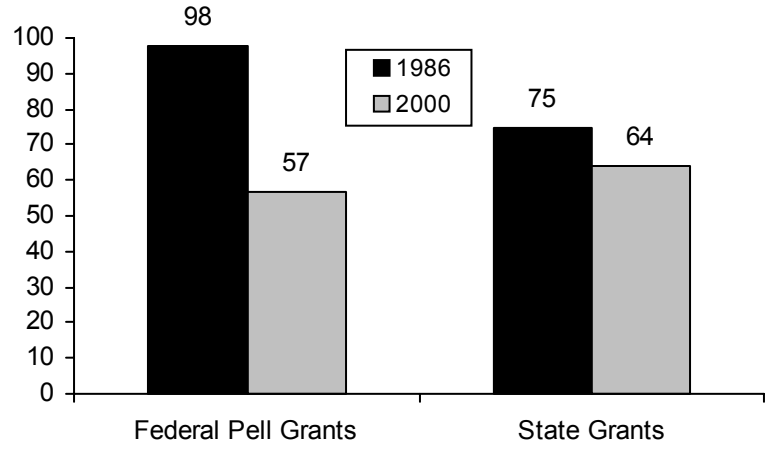
Financial aid to needy students has not only failed to keep pace with rising tuition rates, some researchers argue that policies which became prominent in the 1990s may be rewarding merit to the exclusion of need.[144] In short, dollars that were once principally dedicated to assisting the neediest qualified students are now being used to lure high performers and thus elevate the status of in-state institutions. The intensely competitive institutional pursuit of the best and the brightest students may, it is argued, come at considerable public cost. Public dollars are now widely used to subsidize the costs of an education that would be attained regardless, and, arguably, this shift of public dollars may result in the exclusion of qualified low-income students or less vigorous efforts to ensure their participation in higher education.[145] Further, research offers conflicting evidence that the "best and brightest" actually stay put, that is, continue to live and work in the state where they are educated, presumably one of the goals of these policies.[146]

In March 2001, this shift in policy prompted 20 prominent student aid experts to add their signatures to an advertisement in *The New York Times* and conduct a mailing, an effort financed by the Ford Foundation, decrying the practice. The advertisement stated:

> *Our purpose is to reaffirm public policies that will maximize the development of the individual talent of all Americans and will strengthen the nation's economic security. We believe that in recent years the country has diverted attention, incentives, and revenues away from students and families with the greatest financial need.*[147]

The policies of individual institutions aside, federal financial aid had clearly failed to keep pace with the cost of going to college. As shown in Figure 65, the average federally funded, fully need-based Pell grant as a percentage of tuition at public four-year colleges fell from 98 percent in 1986 to 57 percent in 2000.[148] States have responded, but, as the National Center for Public Policy and Higher Education notes in its 2002 report, *Losing Ground*, little evidence suggests that

FIGURE 65
Federal and State Grant Aid to Students as a Percentage of Tuition at 4-Year Public Colleges



Source: National Center for Public Policy and Higher Education

state dollars are going to the needy. The portion of tuition covered by state grants also fell, according to the Center, though not as sharply, from 75 percent to 64 percent between 1986 and 2000.[149]

The cost of higher education is precluding many from attaining it. In June 2002 testimony before the U.S. House Committee on Workforce and Education, the Advisory Committee on Student Financial Assistance, which advises Congress and the U.S. Secretary of Education, reported its most recent findings, which showed that more than 400,000 qualified U.S. high school students would not be able to attend a four-year college this year, and another 168,000 would forego college altogether because they could not afford it.[150] Over the course of the 1990s, Dr. Juliet Garcia, Chair of the Committee, told House members, these losses meant that 4.4 million qualified students did not attend a four-year school, and another 2 million young Americans did not go to college because the cost remained out of their reach.[151]

Students from low-income families, those with incomes under $25,000, attending a typical four-year public college, the committee estimated, faced a significant financial burden this year. The total family work and loan burden, that is, the expenses students would incur after all grants, the committee concluded, would constitute 68 percent of total expenses or $8,175 a year.[152] The effect of such high levels of unmet need on the expectations, plans, and college enrollment of low-income students, the committee found, is profound: only 59 percent expect to finish college, and only 53 percent enroll in any college immediately after high school.[153] Further, within two years of their graduation from high school, 37 percent of high-need, low-income students reported not having attended any college, compared with just 7 percent of low-need, high-income high school graduates.[154]

In its 2001 report, the advisory committee delineated some of the consequences of high financial needs for students. Specifically, the committee found that 50 percent of all low-income students lived at home with their parents to reduce expenses, and 65 percent worked an average of 24 hours a week while enrolled. Among those enrolled at two-year colleges, 70 percent lived at home, and 80 percent worked an average of 27 hours a week while enrolled.[155] Additionally, the committee found that high-need students were being forced into high levels of borrowing, which can make it difficult for students to persist in their schooling.[156]

Between 1989 and 1999, according to the National Center for Public Policy and Higher Education, the average cumulative debt of college seniors from the lowest income quartile increased from $7,629 to $12,888 in constant dollars.[157] "Since 1980," the center reports, "federal financial aid has been transformed—with little explicit policy debate—from a system characterized mainly by need-based grants to one dominated by loans." Specifically, it found that grants had declined from 52 percent of federal student financial aid in 1981 to 41 percent in 2000, while loans had risen from 45 percent to 58 percent.[158] Collectively, the advisory committee to Congress concluded that these circumstances "exert a powerfully negative effect on the college-going behavior of high-school graduates—even those who are academically prepared."[159] Indeed, it found, that the lowest achieving, high-socioeconomic status students attended college at about the same rate (77 percent) as the highest achieving, low-socioeconomic status students (78 percent).[160]

Obstacles such as these are likely to have a far more significant effect in disproportionately poor Kentucky, where 37.7 percent of all households (includes single and unrelated individuals living together), many of which are headed by those who would be categorized as nontraditional students, reported 1999 annual incomes of less than $25,000, compared with 28.7 percent of households at the national level.[161] For Kentucky, nontraditional students, most of whom head households or families, are a particularly important consideration, because the state's goals for raising college enrollment and graduation rates and increasing the share of the population with a college education cannot be realized by the achievements of traditional, out-of-high-school students alone. But nontraditional students who head households and who do not come from educated families may find college costs a particularly discouraging obstacle. Indeed, a national longitudinal study shows that only 23 percent of first-generation students are nontraditional (aged 25 and older).[162]

Importantly, the KEES awards and expanded financial aid programs now make significant resources available to Kentucky high school students. That KEES awards are given to those with a 2.5 grade point average (GPA) and higher *may* help ensure a higher percentage of low-income, needy students in the program. In other states with more stringent criteria, usually a 3.0 GPA, research has shown that fewer needy students have qualified for these merit-based funds. The elimination of cumbersome application processes for KEES awards is a unique feature of the program.

At the same time, funding for strictly need-based grants has steadily increased here over the past four years, according to KHEAA, from $26.5 million in 1995 to $48.3 million in 2002. Need-based funding, which has grown far more in the past

four years than in the previous four years prior to establishment of the merit-based KEES program and funding by the lottery, outpaces KEES funding. In short, Kentucky is making considerable effort to ensure that low-income students have access to sufficient resources to finance a college education.

INVESTMENT IN INSTITUTIONS OR PEOPLE?

Within the field of higher education research, public funding for higher education is widely believed to be key to holding down the cost of tuition. Over the course of recent decades, as public funding for higher education has declined, state-supported colleges and universities have, in part, replenished revenues with increases in tuition and fees that have been complemented by an increased emphasis on individual and corporate giving and on research dollars. In most states, tuition increases usually follow reductions in state appropriations. Likewise, the funding of merit scholarship programs, particularly in states where general funds are used, usually means reductions in state appropriations to schools.

In Kentucky, however, public institutions of higher education have enjoyed dramatically increased funding in recent years, a merit-based tuition program has been established, yet public institutions have opted to continue steadily increasing tuition. Specifically, between fiscal years 2001 and 2002, the one-year rate of increase (8.3 percent) in the Commonwealth's appropriation for higher education ranked ninth in the nation; the two-year rate of change between fiscal year 2000 and 2002, a 17.2 percent increase in funds for higher education, ranked sixth nationally.[163] Over the course of the previous decade, from 1992 to 2002, higher education appropriations increased 69.6 percent and ranked 14th nationally, according to a national database of higher education appropriations compiled annually by the Center for Higher Education and Educational Finance at Illinois State University.[164]

It should be noted, however, that differing budgetary structures among the various states result in state appropriations for Kentucky's Council on Postsecondary Education-pooled programs, institutional mandatory programs, student financial aid, vocational/technical institutions, and debt service, among other things, that are not always counted as postsecondary education appropriations in other states while they are counted in Kentucky. These structural differences help explain the paradox of Kentucky having a well-funded system of public postsecondary education while, at the same time, having a group of public institutions, according to the Council on Postsecondary Education, substantially lacking in base appropriations compared to their benchmark peer institutions.

Nevertheless, the dramatic increases in appropriations seen here, which arguably will improve the status of Kentucky's research institutions and, in turn, the state's economy, have come at a cost to citizens of the state, rich and poor, educated and uneducated alike. Indeed, the Commonwealth's fiscal year 2002 appropriations for the operating expenses of its public institutions ranked eighth nationally in its share ($10.65) of every $1,000 in personal income and 13th as a portion ($266.75) of per capita income.[165] At the same time, Kentucky students at many of these institutions have seen tuition rise with each year, at a rate of more than 10 percent annually in current dollars. In short, this relatively poor state has asked its citizens

to contribute more generously than those in most other states to the improvement of its public institutions of higher education *and* to financing a tuition assistance program while asking students to pay increasingly high tuition.

The question that remains for policymakers is whether the efforts they have made to enhance the prestige of our institutions of higher education are being matched by a sufficiently strong effort to ensure that the state's poorest students—and their parents—understand what they must do to prepare for college and what financing mechanisms are available to them. Our findings in case studies of Kentucky high schools strongly suggest that communications with children and their parents must begin far earlier than traditional high school counseling to plant the seeds of belief in the possibility of college.[166] Otherwise, student attitudes are often undermined by the culture and attitudes of poor, undereducated family members who perceive, perhaps rightfully, the cost of college as beyond their reach.

CONCLUSION

Throughout the 1990s, public and private institutions of higher education have continued to raise tuition and fees at a steady pace. As a result, many now perceive college costs as unaffordable to the average family even as they acknowledge it as essential to getting ahead. At the same time, federal funding for grants to needy students has declined as the share of financial aid has risen steadily. In turn, student debt has mounted.

In Kentucky, policymakers have made considerable effort to match funds for the state's inclusive merit-based KEES program with expanded commitments to its need-based financial aid programs, but continued revenue shortfalls are likely to undermine the future of one or both and possibly cost the state important momentum. Further, inadequate revenue calls into question whether the 2006 statutory requirement of 55 percent of all lottery proceeds to need-based programs and 45 percent of proceeds to the KEES program is the appropriate "balance" between need- and merit-based student aid.[167]

That our aggressive "education pays" policies have yielded educational progress is without question. Recent census data suggest that the devaluation of education that for too long was an unmistakable feature of Kentucky culture is being reversed. Young people clearly are hearing a new message, and it has translated into above-the-national-average gains in high school graduation rates among the state's youngest workers. Moreover, migrants to the state are complementing a growing body of Kentuckians who hold advanced degrees, representing one of the largest gains in an educated populace in the nation.

But the Commonwealth's pursuit of an improved educational status is not being made in a vacuum. Other states are racing along the same path, effectively negating many of our achievements relative to the nation. While we have made important gains that bode well for the state's future, they will not reverse decades of undereducation and poverty without a vigilant effort to close academic, cultural, experiential, and financial gaps for low-income children and adults for whom higher education often appears to be "above their raisin's." Ultimately, it is their transformation, rather than that of institutions, that will determine the future of our state.

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[138] KHEAA 5.
[139] KHEAA 5.
[140] KHEAA 6.
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[143] KHEAA 6.
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HEALTH CARE REDUX

SOME NEW, SOME STUBBORN OLD PROBLEMS

By Michal Smith-Mello
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While the events of September 11, 2001, have perhaps irrevocably changed our lives, even here in usually placid Kentucky, the problems that predated that awful morning are still very much with us. In the case of health care—or the lack of it—circumstances worsened in the wake of what we have come to know as 9/11. The jolt to our already sagging economy raised unemployment and severed the link to health insurance for more Americans. During 2001, the gains in the insured population that had been realized over the two prior years were reversed. Moreover, health care costs have for now slipped the tenuous leash of managed care and raced to double-digit annual increases that threaten public, private, and personal budgets and virtually ensure more uninsured Americans.

While the chilling threat of terrorism and war and economic uncertainty may have dulled the sense of urgency that once prompted our concerns about health care, none of us is likely to escape the effects of what many analysts conclude is a brewing crisis. Indeed, if the current "jobless recovery" continues, the homeland will almost certainly become less and less secure for millions of Americans of all ages who cannot afford health insurance, health care, or the often pricey centerpiece of medical care today—prescription drugs. Indeed, new and newly revived problems lie just beneath the glittering surface of our technologically sophisticated health care system, the capabilities of which are, arguably, the envy of the world, even as its inaccessibility is frequently the target of condemnation.

CHANGING PERCEPTIONS

Not surprisingly, the economy and war and the fundamental threats to life and well-being that they pose have eclipsed the issue of health care in the minds of Americans. Some pollsters and analysts attribute congressional paralysis on issues such as a prescription drug benefit for elders, a centerpiece of recent cam-

paigns, to the need to focus on far more immediate threats and waning public pressure. In June 2002, Gallup found the perceived importance of health care to be quite low among Americans with just 5 percent citing it as the most important problem facing the country.[168] A separate June poll conducted for National Public Radio, the Kaiser Foundation, and Harvard's Kennedy School, however, found that 19 percent of Americans cited health care issues as one of the most important issues for government to address, right behind the economy (23 percent) and war (20 percent).[169] Fewer Americans (10 percent), however, viewed health care as one of the biggest problems the country faces.[170]

But health care has remained a priority goal for Kentuckians in three consecutive polls conducted biennially by the Kentucky Long-Term Policy Research Center. Indeed, as shown in Table 16, accessible, affordable, high-quality health care for all has consistently ranked as one of the three most important out of 26 goals for the state's future. In response to the most recent survey, conducted around the time of 9/11, Kentuckians ranked this broad and inclusive health care goal as the third most important to the state's future.[171] At the same time, Kentuckians have ranked health care for all Kentuckians last in terms of progress on all three surveys.[172]

TABLE 16
How Kentuckians Rank the Goal of Accessible, High-Quality Health Care for All, by Progress and Importance, 1998, 2000, and 2002
(Out of 26 Goals for the Future)

Rank in Importance			Rank in Progress		
1998	2000	2002	1998	2000	2002
3	1	3	26	26	26

Source: Kentucky Long-Term Policy Research Center and UK Survey Research Center, Visioning Kentucky's Future: Measures and Milestones 2002

Widespread Dissatisfaction with the "System." While the importance of health care issues have been displaced in the national consciousness due to more immediate threats to our security, public opinion about our current delivery system remains decidedly negative. Indeed, we've come a long way from the time when one's doctor was part of the extended family. Now, he or she is more often than not part of a constellation of goods and services that often seems impersonal, difficult to negotiate, confusing, and at times maddeningly illogical. Over the past decade, public confidence in health care and, more pointedly, in managed care and health maintenance organizations plummeted.

The collapse in confidence is reflected in the low ratings given the current system. In a mid-2002 Gallup assessment of public opinion about major American industries, the largest percent of negative responses (49 percent) were directed at health care, followed by the oil and gas industry (44 percent), and the pharmaceutical industry (43 percent), a high-profile element of health services.[173] In the past year alone, public perceptions of the health care industry dropped 7 percentage points.[174] Health maintenance organizations (HMOs), which have become synonymous with managed care, have ranked at the bottom in Gallup's annual poll of

confidence in institutions since 1999.[175] Further, a November 2001 Gallup poll found that 5 percent of Americans think the U.S. health care system is in "a state of crisis" and 44 percent think it has "major problems." Even though these 2001 ratings are not as bad as those of 2000 when 70 percent of respondents said the system was in crisis or had major problems,[176] the view remains decidedly negative.

Public Reluctant about Change. Despite the fact that a significant percentage of Americans regard it as being "seriously ill," Gallup and others find Americans are reluctant to overhaul the U.S. health care system.[177] While three in five Americans said in November 2001 that it is the responsibility of the federal government to ensure that all Americans have health care coverage, a slight increase from the prior year (November 2000), a solid majority (61 percent) said in the same poll that they favored "maintaining the current system based mostly on private health insurance."[178] Similarly, Gallup reported in August 2002 that more than 7 in 10 Americans were dissatisfied with the total cost of health care in the country, yet only a third said they were worried about the health care costs they would have to pay over the coming year.[179]

A summer 2002 National Public Radio (NPR)/Kaiser/Kennedy School poll also found that many Americans are experiencing significant problems with the current health care system but do not desire sweeping change. Here, 20 percent of respondents from all income levels said the health care system works pretty well and needs only minor change; 57 percent said major changes are needed but some things work well; and 23 percent said that so much is wrong with the system that it needs complete rebuilding.[180] Thus, 80 percent of these respondents favored at least "major" change. However, as in the Gallup polls, respondents said they favored maintaining the current system. Expanding state government programs for low-income people, namely Medicaid, was most often cited (84 percent) as a means to extend care to more Americans within the current system.[181]

COSTS UNLEASHED

However, today's blended public-private health care system is already sagging under the weight of rising costs. A long-brewing backlash against the constraints of managed care has loosened some of the controls that had kept the rate of cost increases in check since the early 1990s. Federal researchers find that health care expenditures grew faster in 2000 than at any time since 1993.[182] According to the federal Centers for Medicare and Medicaid Services (CMMS), the growth in government spending for health care rose from 6.9 percent in 2000 to 9.6 percent in 2001 as a result of one-time expenditures and faster Medicaid growth.[183]

Meeting the cost of publicly financed health care has long been one of the toughest challenges for policymakers here and in Washington. But the recent spike in costs could not have come at a worse time. The costs of Medicaid and Medicare, which insure elders, the disabled, and the poor, those who routinely need the most and the most expensive care, are cutting more and more deeply into public budgets already awash in red ink. In Kentucky, 2001 Medicaid spending grew by an estimated 8.6 percent, exceeding its budgeted allocation by $230 million; it is anticipated to grow 9.4 percent in 2002 and exceed its budget allocation by $146 million. However, a

number of cost controls have been adopted, aimed in particular at containing rising expenditures for high-cost prescription drugs.[184] While these continuing shortfalls are significant, they reflect a slower rate of growth than the national average of 10.6 percent seen in 2001 and the 13.3 percent predicted for 2002.[185] Nationally, state-level Medicaid spending exceeded budgeted amounts by $4.4 billion in 2001 and is expected to exceed budgets by $2.8 billion in 2002.[186]

While federal researchers expect the recent jump in cost increases to decline over the next decade, the portion of the gross national product (GNP) consumed by health care is nevertheless predicted to reach 17 percent by 2011,[187] just as Baby Boomers begin to retire and dependency on Medicare begins a nearly certain upward trajectory. Some analysts believe yet another dramatic rise in health care expenditures is likely to follow.

Private spending for health care grew at a rate of 8.9 percent in 2001, compared with 6.9 percent in 2000. CMMS predicts that the private rate of growth will gradually decline to 5.9 percent by 2011, as employers and their insurers roll out more restrictive forms of managed care and shift more costs to consumers. Slowed growth in per capita income and more uninsured people are also expected to figure in depressing demand and thus slowing cost increases. Likewise, public sector spending for health care is expected to moderate considerably next year. While the rate of increase is predicted to decline by 3.5 percentage points next year, Medicaid spending is nevertheless expected to grow at a rate of 7.8 percent annually between 2003 and 2011,[188] a slowed but nevertheless steady climb.

What's Behind the Cost Hikes? The Center for Studying Health System Change reports that the largest shares of 2000 (43 percent) and 2001 (51 percent) medical spending increases were for hospital spending, mainly for outpatient services.[189] Outpatient spending increased 11.2 percent in 2000, the largest increase since 1992, then again by 16.2 percent in 2001.[190] The share of cost increases attributed to prescription drugs, as shown in Figure 66, has declined over the three-year period but nevertheless accounts for one fifth of overall health care spending in 2001, down from 34 percent in 1999.[191]

Health insurance giant BlueCross BlueShield recently weighed in on escalating costs, releasing a commissioned study by researchers at the University of Southern California, the Lewin Group, and HealthShare Technology Inc. that, like public and nonprofit researchers, pinned many of the cost hikes on hospitals, on their rapid consolidation, the underutilization of beds, and rising staff wages. Moreover, the insurance giant's study suggested that the benefits of some of the costly technologies being purchased by hospitals were not always being proven.[192] In a related issue, a General Accounting Office (GAO) study of limited scope and a series of articles by *The New York Times* found evidence that the two major purchasing groups that supply many of the nation's hospitals may not be cost-saving vehicles at all; indeed, some may be costing hospitals, the GAO found,[193] a finding that has significant implications for publicly financed health care.

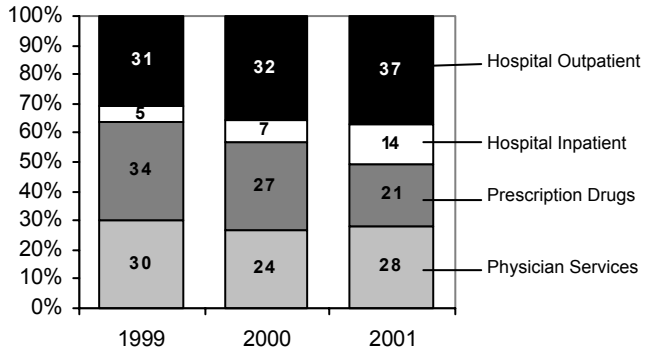
More to Come? After 2011, many believe the bottom line for the health care taxpayers fund may be red for decades to come, as Baby Boomers begin retiring and dependency upon so-called "entitlement" programs steadily increases. If the cost of health care is not reined in or, alternatively, fully funded, the sheer numbers

of older citizens could overwhelm the current system. Also worrisome to some is the growing prominence of health care as a percentage of the gross domestic product (GDP). By 2011, health care spending is expected to comprise between 16 and 17 percent of GDP, up from 13.2 percent in 2000. But, analysts note, the bulk of the increase is largely attributable to the first two years of the projection period, during which economic growth is expected to remain stalled.[194] Prolonged multiyear economic stagnation, however, could make health care an even more dominant segment of the goods and services we produce in the United States. Such prominence, many economists argue, does little to benefit productivity, because the nation already has a sufficient supply of labor, and the benefits of a greater share of the GDP are more likely to accrue to those who are already well-off.[195]

A POCKETBOOK ISSUE

The "system" is not what worries most. It's how to pay for health insurance and the health care that health insurance no longer covers. Families in particular are scrambling to reconstruct budgets that will enable them to meet the cost of health

FIGURE 66
Percent Shares of Overall U.S. Health Care Spending, 1999-2001



Source: Milliman USA Health Cost Index and Center for Studying Health System Change

insurance, which, if available, now rivals that of housing for some. Just ask state employees. For family and individual plans, the cost of premiums and copayments is rising as health insurers, the omnipresent middle men in our private health care system, apportion rising costs to their ratepayers. Rising costs are the likely reason why nationally an estimated 16 million people or 8 percent of those in working families have access to but do not take up health insurance through their employer; another 16 percent or 30 million people in working families simply do not have access to employer coverage.[196] For those who are unlucky enough to be uninsured, significant evidence shows that many simply choose not to get the care they need.

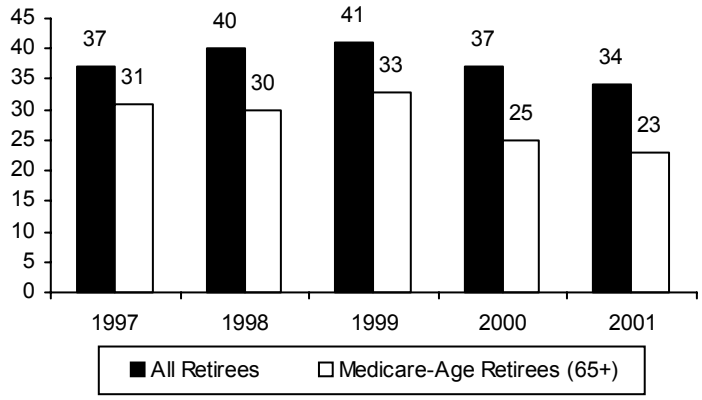
In short, many of today's seniors—and juniors—are being overwhelmed by the cost of health care, by rising premiums for health insurance and increased costs being passed on to them by their employers. In June 2002, 15 percent of insured households and 47 percent of the uninsured reported having trouble paying medical bills.[197] Between 1996 and 2000, the cost for single coverage and family coverage in private-sector establishments increased 33.3 percent and 36.7 percent respectively, according to survey data gathered by the Agency for Healthcare Research and Quality (AHRQ).[198] In the most recent year for which data are available, health insurance premiums rose by 11 percent nationally, and they are expected to rise even higher this year.[199] In the future, virtually every prediction asserts consumers, rich and poor, young and old will shoulder higher costs.

Why? Since 1960, health care has consumed a growing portion of employer benefit costs, rising from 14.3 percent of employee benefit expenditures to 42 percent in 2000.[200] In the face of economic uncertainty, the gradual shifting of more of the cost burden for health benefits to the employees has accelerated, and, as a result, some believe that employer-based health coverage may be in jeopardy. The Commonwealth Fund's 2002 Workplace Health Insurance Survey found that premium increases or cost-sharing, cuts in benefits, or increases in copayments were reported by 41 percent of the nonelderly with employer-sponsored health insurance. Another 16 percent had experienced both types of increases.[201]

Retiree Health Care Benefits Disappearing. One of the most costly components of employee benefits—health insurance coverage for retirees—also appears to be fading from the workplace, as employers assess the long-term implications of rising costs and increased longevity. A case in point: Ford Motor Company, which has two automotive plants in Louisville, reported deducting nearly $2 billion from last year's pre-tax earnings for anticipated payments to retirees, mainly for health care, a 24 percent increase over the previous year's deduction.[202] AHRQ found the number of employers offering health care benefits to retirees under age 65 dropped sharply from 21.6 percent in 1997 to just 12 percent in 2000; firms offering benefits to retirees aged 65 and older also fell sharply, from 19.5 percent to 10.7 percent.[203]

As shown in Figure 67, the percentage of U.S. firms employing 200 or more workers that offer health benefits to retirees has declined since 1997, particularly in the case of coverage for Medicare-eligible retirees. Among smaller firms, those employing between 3 and 199 people, only 3 percent offer health benefits to retirees compared with 31 percent of mid-size firms (200-999 employees), 37 percent of large firms (1,000-4,999), and 64 percent of jumbo firms, those employing 5,000 or more people.[204] A more recent survey by Watson Wyatt Worldwide of "jumbo" firms, however, suggests that even the nation's largest employers are tightening their belts by reducing their liabilities for health care costs. Specifically, the survey found that 20 percent of those surveyed reported no longer offering retiree health benefits to new hires and an additional 17 percent will require new hires to pay the full cost of the coverage.[205] Still other employers reported that they were capping their contributions, linking them to length of service, and imposing stricter minimum service requirements for future retirees.[206] Recent national survey data show that firms now require employees to have an average of 11 years of active service before they become eligible for retiree health benefits.[207]

FIGURE 67
Percentage of U.S. Firms with 200 or More Workers Offering Retiree Health Benefits, 2001



Source: Kaiser/HRET/Commonwealth Survey of Employers on Retiree Health Benefits, 2001

Abundant evidence suggests that many retirees are having difficulty meeting out-of-pocket health care expenses, and the waning availability of benefits to supplement Medicare's yawning inadequacies portends greater economic vulnerability. Here in Kentucky, the Kentucky Long-Term Policy Research Center found in a 2000 survey that more than half (52 percent) of current retirees said they could not afford their medical needs.[208] Similar to their national counterparts, 60 percent of Kentucky's current retirees reported having retired earlier than planned.[209] Most often, they reported doing so for health reasons, but a higher percentage of Kentucky retirees (46 percent) than the U.S. average (40 percent) cited health as their reason for early retirement.[210] Thus, Kentucky's current—and coming—retirees may be considerably more vulnerable to income gaps than their counterparts across the nation.

Clearly, current trends suggest that fewer of tomorrow's retirees will have health care benefits that are comparable to those many of today's retirees have. Without employer-based benefits to augment Medicare's gaps in coverage, future retirees will be less likely to have coverage for prescription drugs, which are key to the treatment of chronic illnesses that are more common among the elderly or for long-term care. Indeed, here in Kentucky, coming retirees aged 45 and older are less likely to report that they expect employer-sponsored coverage to be a major source of health care in retirement than current retirees, 33 percent compared to 38 percent.[211] Moreover, more than twice the percentage of coming retirees compared with current retirees, 43 percent and 21 percent, respectively, report that "keeping health insurance and other benefits" will be a major reason for continuing to work beyond the traditional retirement age.[212] While likely to remain in the labor force for a longer time, poor health may continue to necessitate early retirement for many.

Thus, we may see the tremendous gains in elder income realized over the course of decades further eroded by the burden of out-of-pocket health care costs.

RANKS OF UNINSURED GROW

The "rising tide" of the buoyant economy that lifted more than 2 million people out of the wasteland of the uninsured between 1999 and 2000 has crashed along with stock market portfolios, dot.com dreams, job prospects, and retirement plans. What's more, we now know with greater certainty what national demographic data on mortality and disease had previously intimated, that the lack of access to health insurance is killing thousands of Americans every year, as they quietly acquiesce to their inability to afford a doctor's visit, a proper diagnosis, and the treatment that would, in many cases, restore their health and productivity.

In 2001, the gains of the prior two years, which had broken 12 consecutive years of increasing numbers of uninsured Americans, reversed. Nearly a quarter of the entire year's job losses occurred in the month following 9/11,[213] the largest one-month increase in unemployment in 21 years.[214] And unemployment inevitably leads to a loss of health insurance for many; about 30 to 40 percent of workers who lose their jobs lose their health insurance, regardless of protections that enable them to purchase their employer-based policies for a time.[215] Most simply cannot afford to do so. The uninsured rate among the unemployed is three times as high as it is among the general population.[216] Largely due to losses of employment-based coverage, 1.4 million people or 14.6 percent of the population slipped back into the uninsured column in 2001.[217] At the same time, the number of insured individuals rose by 1.2 million in 2001 as a result of population growth.[218] Overall, the U.S. Census Bureau estimates that 41.2 million Americans were without health insurance in 2001.

Higher Insured Rates in Kentucky. In contrast to the national picture, Kentucky's uninsured population may have fallen somewhat during the 1999-2001 period, from an average of 13.4 percent for 1999-2000 to 13.0 percent for 2000-2001. Kentucky's uninsured population has consistently tracked at a lower percentage than the national average for a number of years, most likely as a consequence of high rates of dependency on Medicaid and the presence of a large manufacturing sector, which typically provides such benefits.

As shown in Table 17, the overall makeup of Kentucky's insured population is quite similar to that of the nation's, but a slightly higher portion of the population is insured. Noted exceptions, however, are seen in selected age groups. Children under the age of 18 are less likely to be privately insured and less likely to have employment-based insurance than at the national level, possibly as a result of low "take-up" rates among working poor parents who cannot afford family coverage. Kentucky's disproportionately poor older population, however, fares better than those at the national average. A higher percentage reports that they have private insurance, and among those with private insurance, more report having employment-based coverage.[219] While the evidence suggests that employer benefits are becoming increasingly costly and scarce for retirees, that roughly 40 percent of Kentuckians aged 65 and older continue to have access to them suggests that out-of-pocket health care expenses *may* be lower for many elders here.

Working Poor Most Likely to Be Uninsured. Nationally, as in Kentucky, those among us who are most likely to be without that critical ticket to health care—public or private health insurance—are the working poor, usually small business employees who earn too much to qualify for public benefits but whose employers cannot afford the cost of private policies. Less than a third (31.3 percent) of working-age Americans who are employed by firms with fewer than 25 employees had their own employment-based health insurance in 2001 compared to two thirds or more of employees of firms with 100 employees or more. And the uninsured are more likely to be younger, newer entrants to the labor force. People aged 18 to 24 were less likely in 2001, as in years past, to have health insurance than those in other age groups.[220]

TABLE 17
Percent of Population with Health Insurance Coverage, Kentucky and the U.S., 2001

	Kentucky	U.S.
Total		
All Persons	87.7	85.4
Under Age 65	85.9	83.5
Under Age 18	90.3	88.3
65 Years and Older	99.8	99.2
Privately Insured		
All Persons	70.4	70.9
Under Age 65	70.9	72.1
Under Age 18	63.3	68.4
65 Years and Older	66.8	61.5
Employment-Based		
All Persons	63.4	62.6
Under Age 65	66.9	66.4
Under Age 18	60.5	63.9
65 Years and Older	39.5	34.5

Source: US Census Bureau, Current Population Survey, March 2002

While exceptions abound, virtually any demographic slice of U.S. Census data on uninsured Americans shows that the poor are consistently far more likely to be uninsured. And employment, the typical path to health care benefits for most working-age adults and their families, guarantees nothing for the poor. Indeed, quite the opposite is true. The Census Bureau's 2001 report on health insurance coverage echoes the irony that has attended employer-based health care in previous years: "Among the entire population 18 to 64 years old, workers (both full- and part-time) were more likely to have health insurance (83.0 percent) than nonworkers (75.3 percent), but among the poor, workers were less likely to be covered (51.3 percent) than nonworkers (63.2 percent)."[221]

What's more, a national study by the National Academy of Sciences' Institute of Medicine estimates that more than 18,000 U.S. adults die annually simply because they do not have health insurance.[222] And the sicker uninsured Americans are, the less likely they are to get the care they need. The Center for Studying Health System Change finds that Americans with chronic conditions, such as diabetes, are far less likely to get needed care and thus to be in fair or poor health or experience a lot of physical limitations.[223] Nearly 40 percent of the uninsured with chronic conditions report being in poor health compared with less than 20 percent of the privately insured with chronic conditions. In turn, the uninsured with chronic conditions were twice as likely to report physical limitations as those with private insurance. Cost is the major obstacle to care for uninsured Americans with chronic

conditions, about 63 percent or 4.7 million of whom have family incomes below 200 percent of the poverty level.[224]

EMERGING ISSUES

Were these long-standing problems with the accessibility and cost of health care not enough to trouble us, a host of issues that may impinge on health care delivery, as well as the fiscal health of government at all levels, lies just beneath the surface.

A New Challenge to Public Health. Most prominent among the new health care issues to arise is the cost and the challenge of building the capacity to respond to a possible terrorist attack. The anthrax attacks that followed 9/11 illustrated the enormity of the challenge that such attacks pose as well as the weaknesses of a public health system without sufficient capacity, coordination, and communication. In response to 9/11 and the subsequent attacks, federal spending to upgrade the nation's public health system rose sharply in 2001 and is expected to grow by another 16 percent in 2002.[225] To help states prepare, the federal government provided $1 billion in grants for which states could qualify by completing a public health emergency response plan. By mid-year, 24 states had qualified, according to the National Conference of State Legislatures (NCSL).[226] In response, states are legislating lines of emergency authority that will enable them to respond to a potential health crisis by, for example, requiring mandatory reporting and compelling health care providers to act in such an event. Compulsory examination, vaccination, treatment, and quarantine of would-be victims are features of state laws that have been adopted, all of which have raised yet another set of concerns about issues of privacy and religious and civil liberties.[227] Also at issue is where the so-called "tear line" between new and expanded roles for public health entities within the proposed Department of Homeland Security will be relative to the vital roles they already play in regard to, among other things, research and development, environmental health, and disease control.[228]

If we are relatively indifferent to the general plight of the uninsured, the roughly 40 million people who remain outside the health care system could become the focus of renewed attention, as public health experts explore the full ramifications of a possible bioterrorism attack. Those who do not seek medical treatment either because they cannot afford to do so or, in the case of many illegal aliens, because they fear deportation could pose significant problems in the event of a bioterrorism attack. "Their lack of insurance is a known risk to their own health, but it must now also be recognized as a risk to the nation's health," observed Dr. Matthew Wynia of the American Medical Association and Lawrence Gostin, a health law professor at Georgetown University.[229] Both urged federal actions that would exempt those who seek medical care for contagious illnesses from deportation or social or economic losses.[230]

Here, Kentucky's federally funded, post-9/11 plan calls for a survey of hospitals to assess their emergency preparedness; a survey of emergency medical services to assess their training, equipment, and capacity to respond to a large-scale event; an expanded staff of epidemiologists trained to deal with infectious diseases to be located in health departments around the state; and an upgrading of animal

laboratories to increase their capacity to identify potential biological agents.[231] Some efforts in the state predate 9/11. In April 1999, University of Kentucky Patterson School of Diplomacy faculty issued a report on the state's readiness for coping with the threat of terrorism. Recommendations included thinking that has now become embedded in the public sector consciousness: the need for more communication and more integration of the roles of key state agencies.[232]

While 9/11 put states and localities on notice about the need to upgrade our long-neglected public health system, the threat of terrorism clearly has reduced our capacity to deal with the immediate and real problems of the uninsured and the unhealthy. Instead, we must expend resources for the unknown, for emergency responses to possible disasters or hazards such as a bioterrorism attack. In short, the terrorist attacks of 9/11 have caused us to lose critical momentum nationally, as resources needed to address persistent inequities have been reallocated to a range of efforts to protect citizens from uncertain threats. Indeed, as RAND's Dr. Bruce Hoffman has suggested, one of the most profound losses exacted by the 9/11 terrorists was that of the capacity to solve problems, as resources are siphoned away for security "to counter and obviate the threat of future tragedies."[233]

Shortages on the Eve of Increased Need. Other long-term health care problems are also brewing. Among them is a growing shortage of medical personnel, most notably nurses, whose thinned ranks have been linked with poorer outcomes for hospitalized patients.[234] A Joint Commission on Accreditation of Healthcare Organizations analysis found that in 24 percent of hospital reports on 1,609 reported patient deaths and injuries since 1996, low levels of nursing staff were cited as contributing factors.[235] An additional 126,000 nurses were needed to staff hospitals in 2001, the Commission and the American Hospital Association (AHA) estimate,[236] and the situation is expected to worsen to a potential crisis as this veteran labor force and the population age. Only an estimated 12 percent of registered nurses are younger than age 30.[237] What's more many more nurses are leaving the profession than are entering it[238] due in large part to the increasing pressures on nurses, particularly those in hospitals, where shorter patient stays and the depleted ranks of nurses and other personnel have combined to create more intensive workloads. The situation will almost certainly worsen. The number of nursing school graduates declined 20 percent between 1996 and 2000, and nursing schools are experiencing gaps beyond those of too few candidates for admission, from shortages of faculty and training sites, to inadequate classroom space and budgets.[239]

Hospitals also report that other health care professionals, including pharmacists, radiological technologists, laboratory technologists, and housekeeping personnel, are becoming increasingly difficult to recruit, and the effect of these shortages ripples throughout hospital operations.[240] Workforce shortages are causing scheduling delays, cancellations, overcrowding, reductions in capacity, and diversions from emergency departments.[241]

Some physicians are also finding the current health care system difficult to live with. In response, a few are establishing alternative types of practices, such as the so-called "boutique" practices that provide unlimited care, including house calls, for a flat annual fee. Others, particularly in the northeast, are relocating or departing from the profession altogether due to the skyrocketing cost of malpractice in-

surance. Many argue that these costs are pricing some specialties such as obstetrics into extinction, jeopardizing a vital component of health care. And they place hospital as well as physician services at risk. According to a June 2002 AHA survey, 1,300 hospitals nationwide have been adversely affected by the rapidly rising costs of malpractice insurance.[242] In response, some are closing entire wards, most notably obstetrics, and eliminating trauma services that save lives but can cost millions to insure.[243]

Shortages of some drugs in hospitals due to, among other things, pharmaceutical industry consolidation and hospital inventory practices,[244] have exposed another point of vulnerability in our health care system. In addition to the threat to routine care, the potential consequences of such shortages would be magnified in the event of a large-scale bioterrorism attack. Shortages of vaccines for children reported by 49 state-level immunization programs are also worrisome. The GAO found that interruptions in supply were attributable to a range of causes, including the outright discontinuation of some vaccines by some manufacturers, production problems at individual manufacturing facilities, and inadequate manufacturing capacity to meet demand.[245] While the GAO found that most supply problems had been resolved by mid-2002,[246] the threat of a possible bioterrorism attack has made shortages of key drugs and vaccines an issue to monitor more closely in the months and years to come.

Insurance with All the Risks. Finally, as they have experienced in planning for retirement, Americans will likely begin encountering new choices in health insurance products. In general, they will be more costly and more risky. From "consumer-driven" or "defined contribution" health care benefits to medical savings accounts, some analysts believe that, when faced with meeting the actual costs of medical procedures, many insured will opt not to spend for unnecessarily expensive tests or treatments and, thus, hold down private-sector health care spending. Of course, the underlying risk for the insured is that they will fail to get precisely the medical test needed to avoid unnecessary illness or even death.

Major insurers, including Humana, Aetna, and the UnitedHealth Group, have already begun to offer their own employees plans that, for those who are willing to gamble, offer very low premiums in exchange for an annual allowance, above which the policyholder must meet all health care expenses until he or she reaches a significantly higher ceiling.[247] The losers in such an environment will be those who gamble and become ill or injured and incur significant medical expenses as a result. Or, worse yet, they will opt not to spend for a recommended medical test, only to learn after it is too late that this cost-conscious decision will cost them their lives.

Such insurance products and consumer choices, however, remain out of reach for hundreds of thousands of Americans who cannot afford the cost of health insurance, even if access to it is guaranteed as it is in Kentucky, because their health is already poor or they have experienced a significant health event, such as cancer or a heart attack. In short, the people who most need health insurance are those who are least likely to get it unless medical expenses drive them into poverty, thus qualifying them for Medicaid, or they survive long enough to be eligible for wholly inadequate Medicare benefits.

By the same token, private sector practices are unlikely to have much effect on the overall growth in health care expenditures. As Len M. Nichols, a fellow of the Employee Benefit Research Institute, notes, employment-based insurance pays for only 27 percent of U.S. health care expenditures.[248] While private insurance provides coverage for more people, public insurance covers the least healthy people. As Nichols observes, the purchasing practices of Medicare and Medicaid will play a far more important role in holding down health care costs than private sector practices.[249] While private sector experimentation can and does influence public practices, the ball is clearly in the public sector's court. And keeping it in play is going to become more and more challenging in the years ahead.

CONCLUSION

If the current revenue picture were not enough to give policymakers, employers, and ordinary citizens pause, the national American Association for Retired People reminded November 2002 voters in a series of television advertisements and will no doubt continue to remind them in future election cycles of the unfulfilled promise of prescription drug coverage for the elderly. At the same time, child advocates point to the waning public attention to health care coverage for poor children and working poor families. In short, public pressure for increased spending for health care is no more likely to abate than is the fiscal pressure to contain health care costs. And the pressure to regain control of health care costs soon will be matched in fervor by what promises to be one of the most demanding elder constituencies in history.

Survey data gathered by the Kentucky Long-Term Policy Research Center suggest that their expectations of government will be considerable. Indeed, sizeable portions of Kentuckians aged 45 and older say that government support for medical care for elders is very (86 percent) or somewhat important (11 percent). Similarly strong support was registered for prescription drug coverage (82 percent and 13 percent), for assistance with long-term care or nursing home care (70 percent and 26 percent); for hands-on help with things that enable independent living (45 percent and 44 percent); and for assisted-living (48 percent and 40 percent).[250] In short, between 88 percent and 97 percent of those Kentuckians who are most likely to be affected by these policies, most likely to vote, and most likely to actively pursue policy changes believe government support for a range of health care provisions for the elderly is important.

As we wrestle with the difficult question of who gets how much health care in the years to come, society ultimately must balance its capacity to meet the cost of care with human need. Ultimately, we will be faced with the question of whether and how to continue on a path that is almost certain to lead to rising portions of our GDP being consumed by health care. While many see this scenario as one of economic stagnation and even decline, others take an altogether different perspective. Indeed, American productivity, they argue, is to an unknown extent being undermined by too little health care. "Think of the economy as a system that at the end of the day is supposed to make a nice life," Stanford University economist Paul Romer told *The New York Times*. "What makes me happy is good food, a nice house and, most of all, good health."[251] In this light, the ascendance of an industry that saves

and extends lives and improves quality of life is anything but bad news. That it remains unaffordable and inaccessible to so many of our most vulnerable citizens is, however, bad news that will continue to haunt and frustrate policymakers.

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A WIRED STATE

TRENDS IN INDIVIDUAL TECHNOLOGY USE

By Michael T. Childress
Kentucky Long-Term Policy Research Center

The tools of the Information Age are spreading throughout our homes, schools, and workplaces, enabling increased computer and Internet use. While computer and Internet use is increasing for virtually everyone, regardless of income, education, age, race, ethnicity, or gender,[252] a digital divide persists, especially along income and education lines. Access to and use of computers and the Internet are important for citizens. Consequently, state and local governments, nonprofits, and the private sector could be called upon to assume greater responsibility to help close the gaps in technology use.

THE IMPORTANCE OF ACCESS TO AND USE OF INFORMATION TECHNOLOGY

Research shows that because information technology permeates so many aspects of our lives, access to and use of it appear to be increasingly important for anyone wishing to become politically informed and economically successful in the Information Age. Labor economists have linked higher wages to using a computer on the job.[253] Recently this notion has been challenged, but even these authors hasten to point out that they are not saying "recent technological changes have had no effect on the structure of wages."[254] Other economists have written about economic benefits besides wages, "such as increased convenience, a wider range of choices, and the opportunity to acquire products customized to their specifications."[255] In this vein, the U.S. General Accounting Office (GAO) notes that concerns over the digital divide have arisen because "the Internet offers Americans a gateway to a vast array of content and applications, and is expected to become a primary medium for communications, commerce, and education, and entertainment in the 21st century."[256] The GAO also reports that "the Internet also makes it easier for citizens to interact with the government." This is borne out by a PEW report that notes

"fully 68 million American adults have used government agency Web sites—a sharp increase from the 40 million who had used government sites in March 2000."[257] Among those polled by PEW, over half use government Web sites to get tourism information, do research for work or school, obtain government forms, find out about government services, and gain information about public policy. Not only individuals benefit from technology. Governments, and the taxpayers, can also benefit from increased Internet use. For instance, it costs the Kentucky Revenue Cabinet an estimated $1.62 to process a paper tax return, compared with $0.43 for an electronic one.[258] Thus, the cost of having a large portion of the population on the wrong side of the digital divide is potentially high.

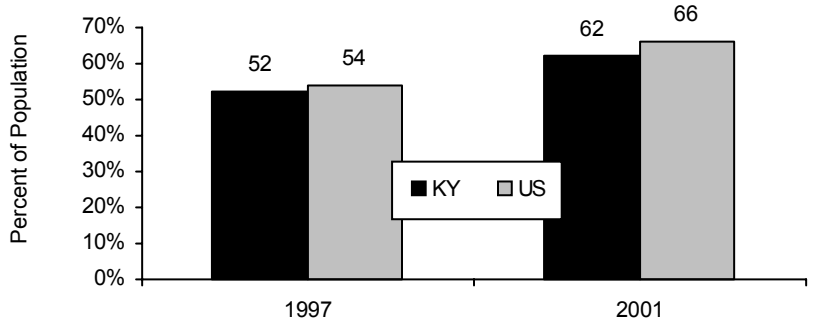
LEVELS OF ACCESS AND USE

Kentuckians are becoming increasingly interconnected in the wired community but still lag behind the U.S. average. We present data in this section to illustrate the levels of access to and use of information technologies in Kentucky. We compare Kentucky to neighboring states and to the United States by examining trends over several years.

Data. The data are from two sources, the Current Population Survey (CPS),[259] which is conducted by the U.S. Census Bureau, and the Kentucky Survey, which is conducted by the University of Kentucky Survey Research Center (UKSRC).[260] The CPS data are comprised of survey responses from noninstitutionalized civilians in the United States living in households, whereas the UKSRC data are comprised of responses from noninstitutionalized persons (civilian or military) living in Kentucky households. Both adults and children are included in the CPS data,[261] but only individuals 18 and older are included in the UKSRC data. Our analysis and presentation of results are at the individual level.[262]

Periodically since 1984, the CPS has included the question: *Is there a computer in this household?*[263] At the individual level of analysis, "computer access" is the percentage of individuals with household access. We assume that everyone in

FIGURE 68
Computer Use From Any Location, Kentucky and the U.S.
(3 years of age and older)



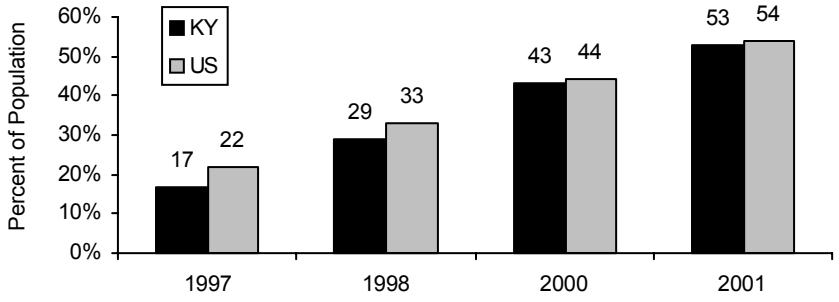
Source: Kentucky Long-Term Policy Research Center analysis of Current Population Survey data

the household has access to the computer.[264] The computer access data from UKSRC are based on two questions: *Do you have a personal computer in your home?* and *Do you have access to a personal computer at work, school, or elsewhere?* The second question is asked only if the respondent answers "no" to the first question.

We are also interested in Internet use. This variable is designed to show whether an individual has used the Internet from any location (e.g., home, school, work, or other). The UKSRC data are obtained from a single question: *Have you accessed the Internet or Worldwide Web in the last year?*

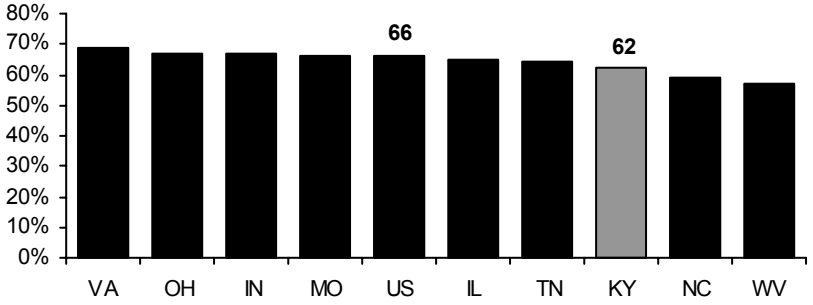
Results. Computer and Internet use in Kentucky has increased rapidly and are near the U.S. average. An estimated 62 percent of Kentuckians had used a computer by 2001, compared with the U.S. average of 66 percent (Figure 68).[265] And approximately 53 percent of Kentuckians had used the Internet by 2001, slightly lower than the U.S. estimate of 54 percent (Figure 69).[266] While Kentucky is below

FIGURE 69
Internet Use From Any Location, Kentucky and the U.S.
(3 years old and older)



Source: Kentucky Long-Term Policy Research Center analysis of Current Population Survey data

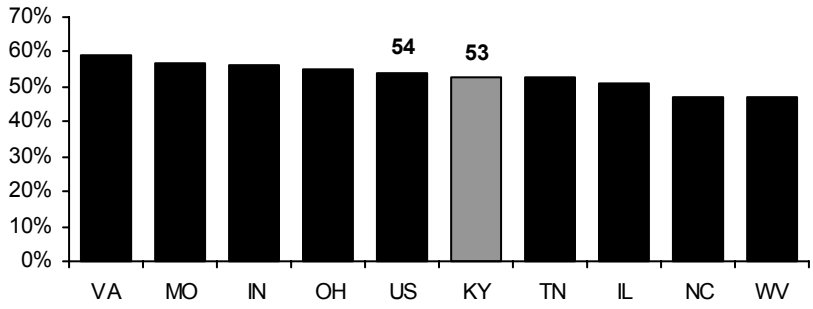
FIGURE 70
Computer Use From Any Location, Selected States, 2001



Source: Kentucky Long-Term Policy Research Center analysis of Current Population Survey data

the U.S. average for both computer and Internet use, it is still competitive with neighboring states (see Figures 70 and 71).

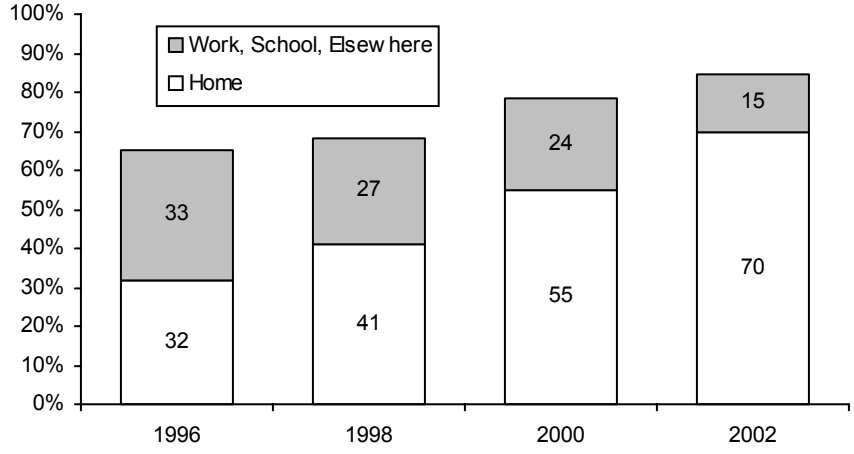
FIGURE 71
Internet Use From Any Location, Selected States, 2001



Source: Kentucky Long-Term Policy Research Center analysis of Current Population Survey data

A *majority* of Kentucky adults have access to a computer in their homes. In 1996, 32 percent of surveyed adults in Kentucky said they had a personal computer in their homes, and another 33 percent did not have a computer at home but had

FIGURE 72
Percent of Kentucky Adults with Access to a Computer at Home, Work, School, or Elsewhere

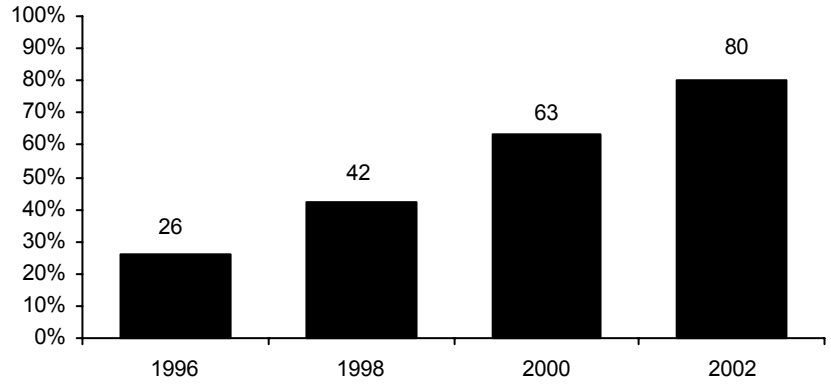


Source: Kentucky Long-Term Policy Research Center and UK Survey Research Center

access to one at work, school, or elsewhere (see Figure 72). Thus, a total of 65 percent of adults in Kentucky had access to a personal computer somewhere. In the most recent survey, completed in the summer of 2002, 70 percent of Kentucky adults had access to a computer at home while another 15 percent had access at work, school, or elsewhere, raising the overall percentage to nearly 85 percent.

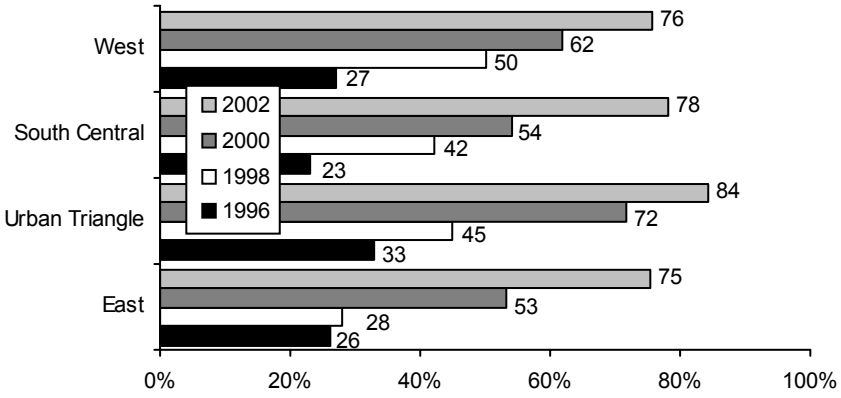
Internet use in Kentucky also has increased significantly over the past six years. In 1996, we found that about 26 percent of adults in Kentucky had used the Internet. In 2002, rates of Internet access had increased to 80 percent (see Figure 73). Moreover, regional disparities in Internet use are narrower (see Figure 74).[267] For example, in 1998 eastern Kentucky trailed the other regions by a large margin, but now a majority of surveyed adults in eastern Kentucky have accessed the Internet and its percentage is closer to those of other regions.

FIGURE 73
Estimated Percentage of Kentucky Adults Who Have Accessed the Internet



Source: Kentucky Long-Term Policy Research Center and UK Survey Research Center

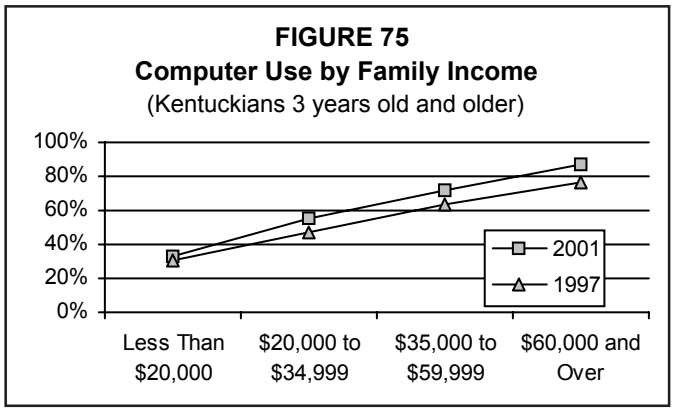
FIGURE 74
Percentage of Adults in Kentucky Who Have Accessed the Internet, by Region



Source: Kentucky Long-Term Policy Research Center and UK Survey Research Center

THE DIGITAL DIVIDE

Despite the rising use of computers and the Internet, a digital divide persists in Kentucky based on income, education, and age (see Figures 75 and 76, and Table 18). For example, Kentuckians in the highest income group are *2.6 times more likely* to use a computer than those in the lowest income group (87 percent compared with 33 percent) and *3.3 times more likely* to use the Internet (77 percent compared with 23 percent). And Kentuckians with a bachelor's degree are *1.7 times more likely* to use a computer than those with a high school diploma or GED (80 percent vs. 48 percent), and are *2 times more likely* to use the Internet (79 percent vs. 40 percent). Finally, younger Kentuckians are much more likely to use these technologies. Thus, the "information haves" tend to be younger, better educated, and wealthier, while the "information have-nots" tend to be older and have less education and income. However, these ratios were generally smaller in 2001 compared to 1997, indicating a narrowing of the digital divide.



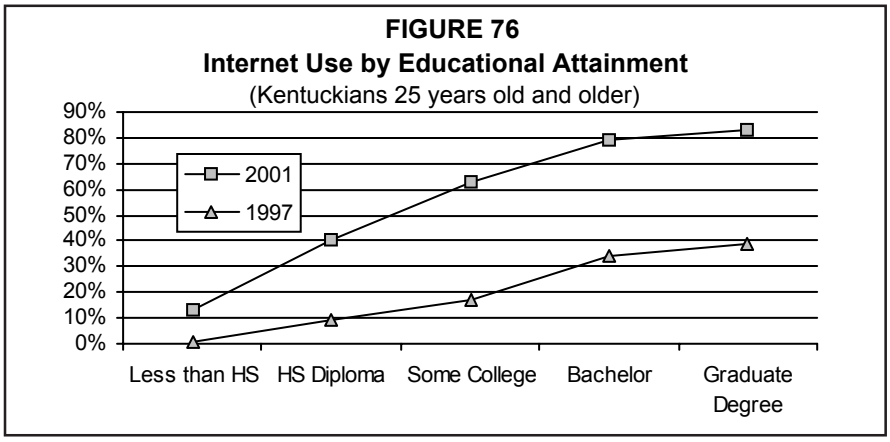


TABLE 18
Computer and Internet Use in Kentucky, 1997 and 2001
(Percentage of Individuals Age 3 and Older)

	Computer Use		Internet Use	
	Oct. 1997	Sept. 2001	Oct. 1997	Sept. 2001
Total Population	52	62	17	53
Income				
Less Than $20,000	31	33	9	23
$20,000 to $34,999	47	55	12	45
$35,000 to $59,999	64	72	21	63
$60,000 and Over	77	87	33	77
Education				
Less than HS[a]	7	13	1	13
HS Diploma[a]	33	48	9	40
Some College[a]	62	67	17	63
Bachelor[a]	73	80	34	79
Graduate Degree[a]	70	86	39	83
Race				
White (non-Hispanic)	52	63	18	54
Black (non-Hispanic)	51	61	9	49
Residence				
Non-Metro	48	61	16	53
Metro	56	64	18	54
Age				
3 to 8	72	78	5	36
9 to 17	93	95	37	76
18 to 24	59	63	26	64
25 to 49	52	68	19	63
50 and Older	24	37	5	34
Gender				
Female	54	62	15	54
Male	50	63	19	52

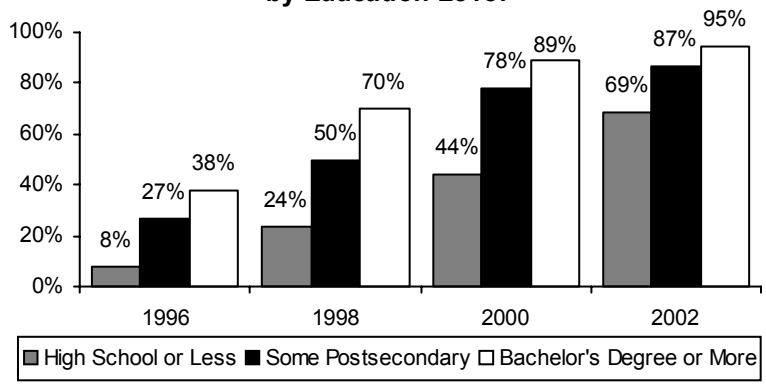
Source: KLTPRC analysis of U.S. Census Bureau , Current Population Survey.
Note: [a] Age 25 and older.

CONCLUSION

We are witnessing three major trends with respect to Kentuckians' use of information technology. First, computer and Internet use in Kentucky have increased significantly over the last several years. Second, there are large differences in technology access and utilization among social, economic, and demographic groups. Third, these differences have been getting smaller. Perhaps the best illustration of these three trends is shown in Figure 77, which illustrates Internet use among Kentucky adults by education level. In 1996 Kentuckians with a bachelor's degree or more were 4.8 times more likely to access the Internet than those with a high

school education or less. The gap has persisted, but it narrowed to a ratio of 2.9 in 1998, 2.0 in 2000, and 1.4 in 2002.

FIGURE 77
Internet Use by Kentucky Adults, by Education Level



Source: Kentucky Long-Term Policy Research Center and UK Survey Research Center

The future challenge for decisionmakers will be to monitor the *size* and *consequences* of the digital divide. For Kentucky to succeed in the knowledge-based economy, it will be important for our citizens to be proficient with the tools of the Information Age.

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[258] Telephone conversation with Brad Thomas, Kentucky Revenue Cabinet. These costs are based on the processing of returns from the 2000 tax year. Electronic returns include TeleFile (telephone filing), Online (Internet filing), and Electronic (typically tax preparers).

[259] The data for this analysis comes from the Current Population Survey (CPS). The CPS is a monthly survey of about 50,000 households conducted by the Bureau of the Census for the Bureau of Labor Statistics. Refer to <http://www.bls.census.gov/cps/cpsmain.htm> for detailed information.

[260] The 1996 University of Kentucky Survey Research Center (UKSRC) survey was conducted from May 5 until June 5, 1995. Households were selected using random-digit dialings, a procedure giving every residential telephone line in Kentucky an equal probability of being called. The sample in-

cludes 629 noninstitutionalized Kentuckians 18 years of age or older, and the margin of error is slightly less than 4 percentage points at the 95 percent confidence level. Calls for the 1998 survey were conducted from May 11 until June 10, 1998. The sample includes 658 noninstitutionalized Kentuckians 18 years of age or older, and the margin of error is approximately ± 3.8 percentage points at the 95 percent confidence level. Calls for the 2000 survey were conducted from May 18 until June 26, 2000. The sample includes 1,070 noninstitutionalized Kentuckians 18 years of age or older, and the margin of error is approximately ± 3 percentage points at the 95 percent confidence level. Calls for the 2002 survey were made from July 20 until August 26, 2002. The sample includes 882 noninstitutionalized Kentuckians 18 years of age or older, and the margin of error is approximately ± 3.3 percentage points at the 95 percent confidence level.

[261] In 1993, 1998, 2000, and 2001, the CPS data are collected on computer access if the person is at least 3 years old. However, these data are collected from individuals 15 years old and older in the 1984, 1989, 1994, and 1997 surveys.

[262] CPS data can be analyzed at the individual or household level. We used the individual weights that approximately equal the inverse of the probability of being in the sample. The UKSRC data are strictly individual-level data and weights are not used to correct for interview response rates.

[263] Subsequent variations on this question include: *Does someone in this household own a personal computer?* (1994); *Is there a personal computer or laptop in this household?* (1998-2000); and *Is there a computer or laptop in this household?* (2001).

[264] Our method was inspired by and adopted from a recent RAND report. See Tora K. Bikson and Constantijn W.A. Panis, *Citizens, Computers, and Connectivity: A Review of Trends* (Santa Monica: RAND, 1999).

[265] The 95 percent confidence intervals are 60.1 percent to 64.6 percent for Kentucky and 65.3 percent to 65.9 percent for the United States.

[266] The 95 percent confidence intervals are 50.9 percent to 55.5 percent for Kentucky and 53.6 percent to 54.2 percent for the United States.

[267] No statistically significant difference is found between the four regions using a 95 percent confidence internal.

A VIRTUAL MARKETPLACE

E-COMMERCE AND ONLINE SALES IN KENTUCKY

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For the past year, a continuing slide in the NASDAQ signals a still-weakening technology sector. As of November 2002, the year-to-date loss of the NASDAQ approached 35 percent of its value. Despite the difficult times that have befallen the technology sector, "e-commerce" sales continue to grow. The U.S. Census Bureau's estimates of e-commerce sales reached $10.3 billion in the second quarter of 2002, a 24.2 percent increase over the second quarter of 2001. During this same period, total retail sales grew by only 2.5 percent.[268] While both of these figures are lower than the previous years' revised growth levels (29.9 percent and 4.3 percent, respectively), they demonstrate that e-commerce sales are still burgeoning despite the relatively slow economy.

While the magnitude of percentage growth in e-commerce is impressive, for the purpose here, only direction is of consequence. Given the consistent yearly increases in the amount of e-commerce conducted in the economy, it's logical to assume that these increases will continue in the near future. With approximately 149 million current Internet users, of which over 100 million are considered to be regular, active users, Internet commerce remains poised to continue its assault on sales at existing "brick and mortar" institutions.[269] Does this national trend hold true for Kentucky?

DESCRIPTION OF DATA

Now in its fifth year of circulation, the 2002 Business Confidence survey, conducted by the University of Kentucky Center for Business and Economic Research, provides the data for this chapter. In each of the five years that the survey has been conducted, firms were asked a series of questions concerning their use of the Internet in conducting their daily business.

Again this year, the survey was distributed to two separate samples of Kentucky businesses: one containing 2,000 firms of all sizes, and the second containing 1,000 firms with at least 100 employees.[270] Examination of the two samples reveals that the characteristics of the businesses completing surveys are very similar to the characteristics of businesses in the entire sample.[271] As in past years, the all-business sample is largely composed of small businesses with fewer than 100 employees. The completed surveys in the all-business sample contained approximately 6 percent large businesses. Since excluding these firms from the sample reduces the sample size only marginally, they are excluded and the all-business sample will therefore be referred to as the small-business sample.

ONLINE SALES AT KENTUCKY BUSINESSES

For the fifth year in a row, the number of large businesses in the state offering their products over the Internet has increased. However, the rate of growth in the number of large firms using the Internet for sales was considerably smaller during the past year than in previous ones as can be seen in Table 19.

TABLE 19
Percentage of Businesses That Sell Their Products Directly on the Internet

	1998	1999	2000	2001	2002
Large Businesses	10.1%	14.7%	15.1%	25.2%	26.5%
Small Businesses	--	--	9.8%	13.3%	11.2%

Source: University of Kentucky Center for Business and Economic Research

While use of the Internet appears to be growing among large firms, survey results reveal that the number of small firms (50 or fewer employees) using the Internet to sell their goods is shrinking, down to 11.2 percent from a high of 13.3 percent in 2001. National estimates place the number of small businesses currently selling online at approximately 12-13 percent.[272] The sluggish economy of the past year appears to have taken its toll on both large and small firms in relation to e-commerce. Absent are the large growth rates in the number of firms turning to the Internet to increase the availability and access to their product in an ever more competitive marketplace.

It is not surprising, given the expense and difficulties associated with conducting online sales, that small firms have not embraced this method of selling during trying economic times. The cost, both monetary and nonmonetary, of conducting online sales as a portion of total costs is most likely considerably lower for large businesses. As a result, large businesses are less likely to abandon online sales in a sluggish economy. Assuming a return to the booming economy of the late 1990s and early 2000s, resumption in the growth of the number of firms using the Internet to conduct online sales could be possible.

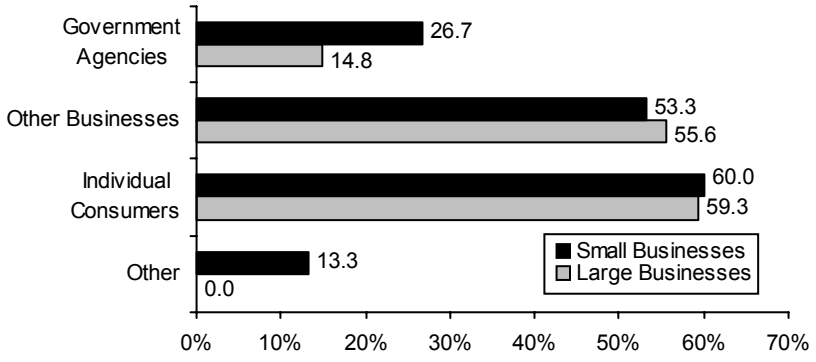
CHARACTERISTICS OF KENTUCKY'S E-COMMERCE FIRMS

Although their participation rates in e-commerce are quite different, the profiles of both small and large firms selling their goods and services on the Internet

are quite similar. Large firms reported having sold their products online for approximately 2.8 years on average. This figure was only slightly smaller for small Kentucky businesses at 2.2 years. In the 2001 survey, nearly 40 percent of firms reported initiating e-commerce within the past year. The results from the 2002 survey reflect a slight shift in this figure with the percentage of firms initiating e-commerce in the past year down to approximately 32 percent. While firms in the state still appear to be expanding into e-commerce, the sluggish economy has substantially dampened the rate at which firms are establishing Internet operations. Those firms that have been selling online for longer than one year report an average of 3.3 years in e-commerce experience.

Previous years of data from the Kentucky Business Confidence survey have revealed that large businesses in the state tended to have a higher incidence of selling their online product to other businesses. While this is still true, the gap in the percentage of large and small firms selling to other businesses has narrowed substantially. Figure 78 also indicates that small businesses in the state are more often selling their product or service to government agencies. The number of small and

FIGURE 78
Customers of Kentucky Businesses Selling Online, 2001



Source: University of Kentucky Center for Business and Economic Research

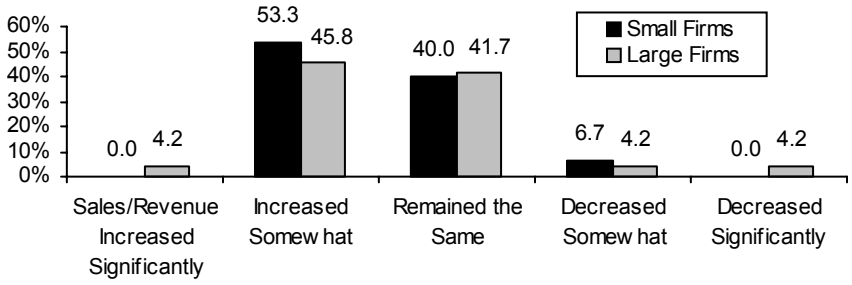
large firms selling their online product or service to individual consumers is nearly identical.

The increased sales/revenue for the different-sized firms appears to come from different types of online customers. For large businesses, approximately 54 percent of their online customers are previous offline customers of the business, as compared with only 20 percent for small businesses. Small businesses, conversely, indicate that 60 percent of their online customers are new customers to their business, as opposed to only 27 percent for large businesses. The Internet appears to be a strong tool for small Kentucky businesses, allowing them to reach customers that might not have been previously aware of or able to purchase their product or service. For large businesses in the state, e-commerce seems to serve primarily as a convenient way for existing clients of the business to place orders.

REVENUES AND E-COMMERCE

In addition to determining the end user of the goods and services that Kentucky firms sell online, the survey sought to determine the effect online sales have had on the firms' sales and revenue. The results of the 2002 survey indicate that a larger portion of the Kentucky firms selling online in the past year experienced increased sales and revenue over previous survey years. Figure 79 shows that approximately 50 percent of large firms and 53 percent of small firms reported that Internet sales increased their sales/revenue either somewhat or significantly in the past year. Although firms are implementing Internet sales at a reduced rate over previous years, those firms using the Internet to conduct sales are generally reporting increased sales/revenue, perhaps helping to buoy their firm from the sluggish economy.

FIGURE 79
Revenue Changes Since the Initiation of E-Commerce, 2001



Source: University of Kentucky Center for Business and Economic Research

WHY KENTUCKY BUSINESSES DON'T SELL ONLINE

While the general time trend in Kentucky is one of an increasing number of firms selling online, the majority of businesses still do not sell their product or service over the Internet. The 2002 Business Confidence Survey asked participants to indicate why it is that they have chosen not to sell their product online. Table 20 indicates that the overwhelming majority of those businesses not selling online choose not to do so due to the incompatibility of the format with their product or service. The majority of both small and large businesses indicate that they do not sell their product online because it is difficult to do so. While 94.4 percent of

TABLE 20
Why Firms Don't Currently Sell Online

	Large Firms	Small Firms
Not sure how to initiate	3.7%	3.0%
Difficult to conduct for my goods/services	94.4%	87.0%
Requires too much money/investment	1.9%	5.0%
Concerns over security issues	0.0%	5.0%

Source: University of Kentucky Center for Business and Economic Research

large firms report that it is difficult to offer their product over the Internet, 87 percent of small firms make the same claim. These figures are up significantly over last year's figures of 84.2 percent and 77.5 percent, respectively.

Further investigation reveals that of those small businesses not currently using the Internet as a means to sell their product, over 63 percent respond that they have no future plans to incorporate the Internet into their businesses. Large businesses are slightly less reluctant to rule out the use of the Internet to sell their product in the future, although nearly 46 percent of those firms responded that they have no future plans to use the Internet for sales. These figures appear to indicate some sort of saturation in terms of the number of Kentucky firms that are incorporating the Internet into their businesses for online sales.

Coupled with the small increase in the number of large firms (and the decrease in the number of small firms) that used online sales for their business in the past year as well as an increase in the percentage of firms that claim that online sales are hard to conduct for their good or service, it appears that those firms for which initiating online sales is most advantageous have already done so. The initial rush of firms to join the e-commerce age seems to have, at least temporarily, subsided. In addition, as noted above, while businesses continue to report that online sales helped to boost their profits and sales, very few of the firms in the sample report that online sales have a significant impact on their sales and revenue, either positively or negatively. These individual pieces of information may collectively suggest that online sales do not directly translate into instant profit. As a result, Kentucky firms may no longer be in a rush to incorporate this technology into their business. Together with a sluggish economy, these notions help to explain the decline in the rate at which Kentucky firms are using the Internet for sales.

CONCLUSION

While the percentage of large businesses in the state using the Internet to conduct online sales continued to grow, albeit at a significantly slower pace, the percentage of small businesses conducting online sales actually shrank over the previous year. Based on the results of the survey, 26.5 percent of large Kentucky businesses and 11.2 percent of small Kentucky businesses are involved in e-commerce. As in previous years, the majority of online sales are to new customers with 60 percent of small business sales and 27 percent of large business sales going to new customers.

The overwhelming majority of businesses not currently using the Internet for online sales indicated they did not use it due to the incompatibility of their product being sold in this manner. In addition, a significant portion of these firms indicated that they had no plan to use the Internet in the future of online sales. Given the new information provided by the survey results, it appears that the state has possibly reached, at least temporarily, some sort of saturation point in terms of the number of firms for which online sales is a good business decision.

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[268] U.S. Department of Commerce, "Retail E-Commerce Sale in Second Quarter 2002 Were $10.2 Billion, Up 24.2 Percent from Second Quarter 2001, Census Bureau Reports," News Release, 22 Aug. 2002, 18 Dec. 2002 <http://www.census.gov/mrts/www/20022q.pdf>.

[269] Computer Industry Almanac Inc., "Internet Users Will Top 1 Billion in 2002. Wireless Internet Users Will Reach 48% in 2005," Press Release, (Buffalo Grove, Il: Author, 21 Mar. 2002) 18 Dec. 2002 <www.c-i-a.com/pr032102.htm> and Nielson/Net Ratings, Table, "Average Web Usage," Oct. 2002, 18 Dec. 2002 <http://www.nielsen-netratings.com/nnpm/owa/NRpublicreports.usagemonthly>.
[270] Responses were received from 247 firms, 145 in the all-business sample and 102 from the large businesses.
[271] For more information, see "Survey Methodology," *2001 Business Confidence Survey, Kentucky Business and Economic Outlook* 5.1 (Lexington: University of Kentucky Center for Business and Economic Research, 2001).
[272] Reported on the "NUA Internet Surveys" web site. No comparable data was available for large businesses.

SEVEN E-Z PIECES

FINANCING STATE AND LOCAL GOVERNMENT

By Charles W. Martie
Governor's Office for Policy Research

A year after the Kentucky Long-Term Policy Research Center produced its report, *Financing State and Local Government: Future Challenges and Opportunities*,[274] which examined Kentucky's tax structure in some detail with an eye toward equity and efficiency, the tax policy debate continues amid even direr budget news. Policymakers reflect on issues raised in that book, and examine the future of Kentucky's tax structure based on the trends developing during the 1990s.

Tax policy is typically couched in terms of equity and efficiency.[275] *Financing State and Local Government* focused on these two policy objectives and hinted at legislative and administrative paths to greater tax equity and efficiency. Most tax code reforms tend to be incremental or address specific tax issues.[276] This chapter summarizes some specific tax issues that Kentucky faces now or will face in the future. Attacking these problems conscientiously will likely render the state's tax structure more equitable and efficient.

The recent history of state and local taxes can be summarized in one word: erosion. For example, Bruce and Fox[277] estimate that from 1979 to 2000, the sales tax base has fallen nationally from 51 percent of personal income to 42 percent. In 1996, Kentucky ranked 29th out of 45 states in sales tax as a percent of personal income. Bruce and Fox further estimate that between 1996 and 2003, this figure will decline in Kentucky by more than 2 percentage points. For reasons we explore in this chapter, Kentucky's state and local governments are witnessing the erosive effect of changes in technology and the economy on the tax base, while at the same time continuing to extend tax breaks to constituents and to new business ventures. The overriding effect is a reduction in the elasticity of the tax structure, as it loses its ability to grow with the economy. Essentially, the following elements explain the erosive effects:

- e-commerce transactions that have both lowered prices and moved trans actions beyond current nexus (a business' taxable presence in a state) stanards
- the economy, whose uneven growth affects revenues in myriad ways
- economic development tax expenditures for new and expanding enterprise
- elderly population growth, which alters the mix of transactions, income, and assets
- effective tax planning, which has targeted state taxes more over the last decade
- end runs by special interest groups which seek federal legislation to reduce state tax liability, and
- evasion, unlawful noncompliance with existing tax laws.

These seven E-Z pieces of the puzzle fit together to reveal the nature of Kentucky's future problems in tax policy and fiscal viability. The remainder of this chapter summarizes state and local financing in Kentucky and then discusses each of the seven issues in turn.

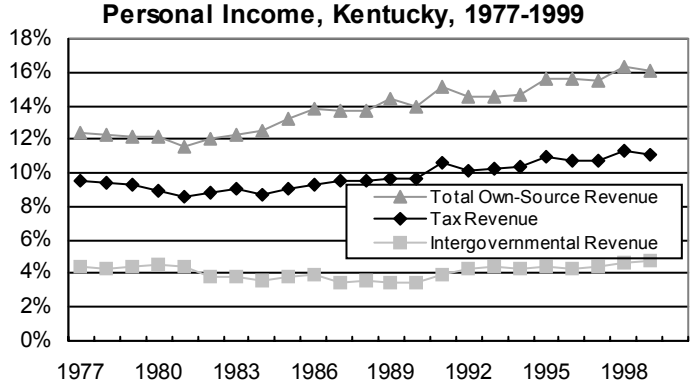
A QUICK SUMMARY OF KENTUCKY STATE AND LOCAL FINANCES

In the chapter, "Recent Trends in Kentucky State and Local Tax Policy" of *Financing State and Local Government*, David Wildasin described Kentucky's revenue sources with census revenue data going back to 1977. Kentucky receives 53 percent of its general revenue from the state and local taxes most people are familiar with. Another quarter of the revenue comes from the federal government, which is to say, from Kentucky residents who pay federal taxes as well as residents from the other 49 states. The remaining fourth comprises miscellaneous taxes and fees. This composition has largely remained the same over the last decade.

Taxes collected by Kentucky's state and local governments account for 10.5 percent of personal income in the state, following a modest upward trend since 1980 (see Figure 80). In 1980, state and local government taxes took $1 in $12; now, they consume nearly $1 out of $9. Kentucky's fiscal growth over this period has exceeded the national average, putting the state above average in taxation out of personal income. Both state and local tax trends contribute to this above-average growth.

Kentucky's state and local government fiscal base has been characterized by some as a two-legged stool, meaning that rather than having three large taxes (income, sales, and property) comprising equal shares of revenue, Kentucky's income and sales taxes carry most of the load. These two taxes comprise 72 percent of state and local taxes in Kentucky, as opposed to 62 percent nationwide. Property taxes, the short leg, account for only 17 percent here but 30 percent nationally. Most of the weight falls on the income tax in Kentucky. The sales tax share is near the national average, but the income tax, including local occupational taxes, exceeds the national share by 8 percent. Local income taxes share the blame, exceeding the national average; local property taxes remain well below average.

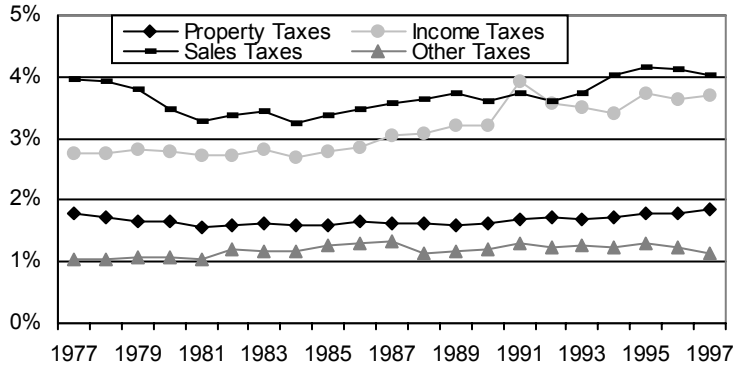
FIGURE 80
State and Local Revenue as Percent of Personal Income, Kentucky, 1977-1999



Source: Census of Governments data

Figure 81 shows the trend in Kentucky's major taxes as a percentage of state personal income. Note how the recent situation resembles that of 1977, with the important exception of the income tax. Kentucky's major taxes are taking about the same portion of income as they did 25 years ago, except for income taxes, which now take a full percentage point more than they did then. Property taxes have kept pace with income growth over the period, despite the House Bill 44 cap on real property tax growth and the *St. Ledger* decision removing the intangibles tax on stocks and bonds. This result is mostly due to growth in local property taxes that made up for a slight relative decline in state levies. The sales tax takes the same percentage of income as it did back then, with the rate increase of 1990 merely compensating for the erosion of the base. Miscellaneous taxes slipped a little as

FIGURE 81
State and Local Tax Revenue as Percent of Personal Income, Kentucky, 1977-1997



Source: Census of Governments Data

they trudged along with income, with no one tax generating significant revenue. Federal funds are only slightly higher than they were then. Any long-term elasticity in the state and local tax system in Kentucky has come from income taxes.

THE LEGACY OF THE DOT.COM BOOM

For state and local governments, the dot.com binge of the 1990s has turned into a fiscal hangover of epic proportions. Over the past year, 45 states have seen a real revenue decline. A total of $38 billion was missing from state coffers in 2002 that was there the year before.[278] As incomes and revenues soared in the 1990s, largely attributable to spiking capital gains (to 6 percent of GDP as opposed to a long-term trend of 3 percent), states throughout the nation cut a total of $40 billion in taxes, money that would have averted the present fiscal crisis.[279] It was a typical story: short-run revenue gains answered with permanent tax cuts. Kentucky was no different. The Commonwealth extended permanent tax cuts during the period to businesses, pensioners, heirs to estates, and physicians, as well as to individuals and families claiming the standard deduction. Absent these permanent cuts, state taxes would have yielded nearly $255 million more this fiscal year.[280] While we should expect elected officials to broaden their political support when the till is full, some forward thinking would have prevented some of this prodigal tax policy. As such, the tax base was cut and with it, the ability of state taxes to grow with the economy.

FUTURE TRENDS IN KENTUCKY STATE AND LOCAL FINANCES: SEVEN E-Z PIECES

If we accept the premise that government will cut taxes when revenues are plentiful, we are forced to address the present fiscal situation and turn to other issues that affect the tax base. Tax reform in Kentucky will likely be more successful to the extent it grapples with seven major issues. In essence, these phenomena will force tax reform upon Kentucky, more so than any one elected official, party, or constituency. At present, some of these forces are depressing the state's finances significantly and forcing cutbacks in services. Kentucky is not alone, and myriad responses to these factors are being discussed or implemented throughout the nation.

E-commerce. Policymakers have focused on two important issues with respect to e-commerce: growth of the Internet marketplace and taxpayer compliance with sales and use tax. In recent years, various researchers have estimated the potential loss of sales and use tax revenues from e-commerce. One study put the loss to Kentucky's general fund at $84 million in 2001, growing to $286 million in 2006.[281] While the slowdown in e-commerce development continues, the same is not true for Internet purchases. Over the past year, e-commerce purchases have been the fastest-growing component of retail sales, rising 24.2 percent nationally.[282] However, they still represent only 1.2 percent of retail sales. The real threat is in the distant future.

Unfortunately, the view of the sales and use tax as a retail or consumption tax is incomplete. One study estimates that 46 percent of sales and use tax is paid on purchases of business inputs.[283] Business-to-business e-commerce has also been touted as a fast-growing component of Internet business, but reliable estimates by state are not available.

One significant reason that Internet purchases are popular, both for businesses and consumers, is that prices are more competitive than at the local retail store. Growth estimates aside, the sales and use tax will decline for most goods if a price reduction reduces total expenditures on taxable goods. This should be especially true in the purchase of business inputs, where the demand for such goods is likely to be relatively price inelastic. Online auctions for spare parts and raw materials advertise significant reductions in price, made possible by direct shipping and real-time bids.

So far, the debate on business use tax has focused on compliance issues when, in fact, the market may have robbed state coffers of much more. A study of tax compliance in the State of Washington estimated business use tax noncompliance at 20 percent of tax liability.[284] State tax agencies have already begun to implement data warehousing and data mining strategies to discern noncompliant behavior among businesses, and it will likely continue to be the case that the cost of pursuing those who evade sales and use taxes will exceed the revenue gain. In short, the level of price competition available through the Internet may be more of a threat to growth in sales and use taxes in the long run.

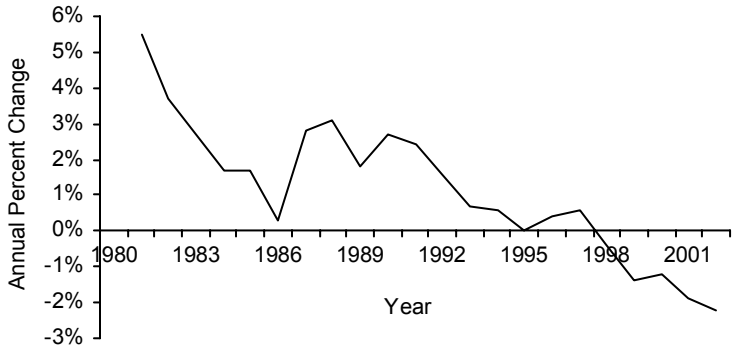
The Economy. Three facets of the larger economy over which the state has little if any control will continue to exert pressure on both revenues and spending.

Inflation. Taxes placed on the market value of a transaction or of a physical asset depend not only on the quantity of the item but also its price. The sales tax and tangible property taxes depend, in part, on the price at which the item was purchased. The 1990s brought inflation rates back to levels of the 1950s and 1960s. The average inflation rate fell from 7.2 percent in the 1980s to 2.2 percent in the 1990s. The cumulative effects of such a change on transactions taxes can be tremendous. A $100 taxable good under 1980s-level inflation costs $150 after 10 years. Under 1990s-level growth, the good costs only $124. At a 6 percent sales tax rate, the difference is $1.40, or 15 percent of the tax.

More relevant to the sales tax than the overall inflation rate is the inflation rate for retail purchases. As the Internet and online auctions continue to expand, they increase the number of competitors for traditional retail outlets. The success of Internet auctions also brings more used items into competition with new goods, further depressing new goods pricing. Figure 82 shows that the mild inflation for department store goods in the 1980s turned to deflation in the 1990s. We should expect this trend to continue for some time as online auctions and Internet commerce expand both domestically and overseas and general inflation rates remain moderately low. To the extent that the income freed up by lower retail prices goes into consumption outside the tax base (services, out-of-state purchases, or saving), sales tax growth will suffer.

The Transition from Goods to Services. At the time Kentucky's sales and use tax was established it was designed primarily to tax goods, not services. In 1960, goods comprised 59 percent of the consumption base nationally; they comprise approximately 42 percent currently. In Kentucky, the mix of Gross State Product (GSP) followed the same trend (see Figure 83.) The change in consumption pattern has eroded the tax base and was partly responsible for the rate increases from the original 3 percent to the current 6 percent. The shift from goods to services resulted

FIGURE 82
Department Store Goods Inflation Rates, 1980-2002

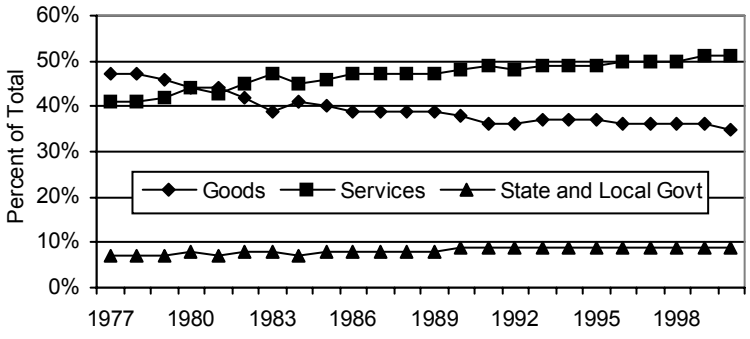


Source: US Department of Labor, Bureau of Labor Statistics

from several factors, including the aging of the population (increasing the demand for medical and related services); greater female labor force participation (resulting in the need for services catering to a two-income family); and higher income (allowing for more leisure activities).

Also noteworthy in Figure 83 is the government sector, which relies on taxes from all sectors but most heavily on taxes from the goods-producing sectors and has remained a fixed portion of GSP. The state and local portion has risen slightly over time. The declining share of goods sectors cannot support government without increased rates or, in Kentucky's case, help from other broad-based taxes that cut across all sectors.

FIGURE 83
Services and Goods in Kentucky's Economy as a Percentage of Gross State Product, 1977-2000



Source: US Department of Commerce, Bureau of Economic Analysis

Income Growth. The performance of state and local taxes will depend not only on how much personal income grows, but also how this growth is distributed. Fairness issues aside, a changing income distribution will affect the growth of tax revenues. If most growth occurs in the highest income class, this bodes well for income tax, but relatively poorly for sales tax because the portion of Kentucky taxable spending from income is lower for this income class than for any other. Property taxes will benefit to the extent that high-income individuals invest in tangible assets and real estate in the state. If they buy vacation homes and extra cars for the vacation home or if they buy intangible assets such as stocks or bonds, the property tax will have a less elastic response.

If considerable growth occurs among low-income families, then the sales tax should respond more than the income tax. Among the poor, their propensity to spend relatively more on consumption than other income classes and their limited opportunity to spend out of state will generate a more elastic sales tax response. Property taxes will expand to the extent low-income families purchase new homes and better automobiles. Some evidence indicates that higher income families fared better during the 1990s in Kentucky, although not all indicators in the various studies confirm this.

Economic Development. Kentucky offers an array of economic development incentives that originally targeted depressed areas of the state and large manufacturers. Furthermore, many of the credits were based on corporation income taxes, which meant that the investment had to at least generate a profit to be worthy of a credit. However, over time, sales tax credits and job assessment fees grew, and the boundaries of so-called depressed areas were expanded to encompass existing companies seeking tax benefits. It is estimated that enterprise zone credits cost the state more than $347 million during the 1993-2001 period.[285] The estimate for 2001 alone currently stands at over $60 million. The four other large economic development credit programs (KREDA, KDJA, KIDA, and KIRA) resulted in tax expenditures of approximately $254 million over the same nine-year period.[286]

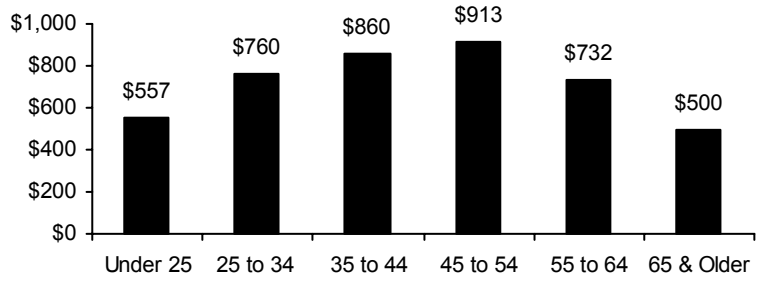
Furthermore, legislation in recent years has added tourism tax credits against the sales tax that allow large entertainment venues to get back 25 percent of their investment. Each session of the legislature brings creative statutory language to expand the definitions to fit more projects. The newest economic development incentive in Kentucky's arsenal is tax-increment financing (TIF), where firms get to capture a portion of any new tax revenue that arises from their project. While TIFs have been popular in the United States for years, they were largely restricted to local property taxes. Kentucky has opened the door for companies to recapture revenues from all of the major state taxes. The Commonwealth's Tax Expenditure analysis declares the cost of these incentives to be unknown but substantial.

The tax code is riddled with such exemptions that favor business and farm investments of various kinds, including recycling and pollution control equipment, manufacturing and farm machinery, motion picture company purchases, alcohol production facilities, and emu-raising facilities, to name a few. The tax expenditure associated with these exemptions can be expected to grow with these industries, naturally reducing the growth of Kentucky's tax base. As the tax base shrinks, state and local governments have responded and will continue to respond by raising tax

rates. As tax rates rise, so will the demand for more exemptions from taxes. We should also expect that competition among states for business investment will continue and that Kentucky will remain dedicated to an ever-growing array of incentive programs that may increase the erosion of the tax base.

Elderly Population Growth. In *Financing State and Local Government*, Michael Childress painted Kentucky's picture of Dorian Gray in his chapter, "The Impetus for Modernization."[287] He argued that the changing demographic patterns (fewer forms of taxable income and less consumption of taxable goods) would weaken the sales and income tax bases. Using Consumer Expenditure Survey data by age group, he showed that the elderly not only make fewer taxable purchases, opting for more food at home, services, and prescription drugs than other age groups, but also receive more in nontaxable or partially exempt forms of income (see Figure 84).

FIGURE 84
Estimated Annual Sales Tax Paid, by Age Group



Note: Based on Kentucky Long-Term Policy Research Center analysis of Consumer Expenditure Survey data, South Region, 1998-99 average expenditures

Furthermore, the exemption of pensions from income tax will become more costly over time, particularly because it grows with inflation as well as with the population of pensioners. As the Baby Boom generation ages, the percentage of Kentuckians aged 65 and older is expected to rise from 12.5 percent in 2000 to over 21 percent in 2025.[288] If the current level of government services is to be maintained, a larger share of the tax burden will fall on current workers and their families. As the elderly population rises, its representation in Frankfort and Washington will also increase, raising the likelihood of even more age-friendly tax policy. We should expect the income, assets, and transactions of this age group to constitute a smaller portion of the state and local tax base in the future.

Effective Tax Planning. While it can be argued that businesses have always sought to minimize the impact of state and local taxes on the bottom line, several researchers have noted an increased emphasis on state tax planning recently. The reduction in federal corporate income tax rates in the mid-1980s reduced the incremental gain from federal tax avoidance and therefore raised the relative importance of state taxes on the bottom line. Furthermore, technological changes have ren-

dered 1960s-style manufacturing exemptions open to a wider population of businesses. In a 1999 article, Richard Pomp cited the increased attention given by corporate CEOs and CFOs to state tax matters as a source of corporate tax reductions.[289] Here are a few examples of effective tax planning in Kentucky:

- In the corporation income tax area, the reporting discretion allowed companies to erode the tax base over time. Kentucky allows voluntary consolidated reporting for corporate income tax purposes. According to a 2001 report written for the Kentucky General Assembly, "voluntary consolidated reporting expands the tax avoidance options available for businesses, and reduces Kentucky's ability to collect corporate taxes (though the problem is lessened by requiring companies to maintain their election for eight years). Related companies can be expected to combine their activities for tax purposes when the combination will reduce their tax burden and to file separate returns when it does not."[290]
- Tax practitioners have developed new business practices specifically to avoid sales and use tax liability for their clients. For example, liability for the sale of business assets has been avoided through the creation of related-party limited liability companies (LLCs), organizational structures that exempt owners from individual liability and from corporate income tax.
- The number of LLCs is growing. In Kentucky, LLCs were first allowed in 1994. Unfortunately, the corporate license tax was not extended to cover this form of organization, and by the end of the decade, nearly 6,000 businesses, or 5 percent of all companies in the state, were formed in this fashion. The fiscal effect of this loophole has not been adequately determined.

End Runs to the Federal Level. One benefit of the federalist structure of American government is that it allows for governance tailored to local, regional, and national issues and preferences. The U.S. Constitution grants rights not specifically given to the federal government to the states, and individual state constitutions grant their respective local governance rights. However, when there are areas of contention as to what is constitutionally proscribed, citizens who perceive harm from local statutes can do an end run to the state legislature seeking preferential treatment, and the same occurs for those harmed at the state level. Interstate commerce is one such battleground. The expansion and commercialization of the Internet raised the relative importance of interstate commerce in much the same way as the interstate highway expansion of the 1960s. The same could be said of any major transportation development that broadened geographical markets. The promise the Internet holds for globalization and productivity, coupled with the generous early estimates of e-commerce revenues, have raised the stakes for those playing this game.

The end runs of the 1990s have been extensive. First, the *Quill*[291] decision in 1992 not only narrowed states' rights to collect taxes on out-of-state sales, it also threw the ball into the hands of Congress to decide. Then, the federal moratorium on taxation of Internet access charges further stifled states' ability to tax economic

activity within their borders. Subsequent debates in Congress on extending the moratorium failed to clarify that the law was specifically directed at Internet access charges and not e-commerce transactions, fueling the controversy over Internet taxation in general. In 2001, House members proposed H.R. 2526 to constrict the definition of nexus and the ability of states to impose various forms of business activity taxes. One estimate put the potential fiscal impact to state governments at $9 billion annually.[292] Given the change in leadership in the U.S. Senate in 2002, more business-friendly end runs are to be expected.

Evasion. Empirical evidence on the current rate of noncompliance suggests that state tax gaps (the difference between what is due and what is being paid) range between 5 and 10 percent of General Fund revenues. The causal factors of noncompliance are well known and researched. To summarize, noncompliance grows with the tax rate, the burden on select groups of taxpayers, and the general perception of inequity in the tax system. Noncompliance also depends on the perceived cost of noncompliance weighted by the risk of being caught. A failure to address some of the issues in this paper, holding other things constant, will lead to an increase in tax rates and a shifting of the tax burden to non-elderly families and in-state companies of particular organizational forms. Continued narrowing of the tax base through favorable exemptions will divert tax agencies' resources from discovery of noncompliance to processing and administration activities. Both factors will increase noncompliant behavior. It should also be noted that noncompliance narrows the tax base and exacerbates, in the long run, the very factors that bred noncompliance in the first place.

CONCLUSION

In general, good tax policy provides for an adequate and adequately growing revenue stream collected in an equitable and efficient fashion. But any tax system, even one founded upon sound principles, cannot remain static. Over time, pressures from within and without weaken its foundations and sap its ability to serve its constituents. Internal political pressures to spend temporary revenues on permanent tax cuts are, unfortunately, inherent in the system. Outside factors also affect the long-term performance of state and local taxes. These pressures come from all sides and at various speeds, with varying degrees of impact. This chapter has identified seven sources of fiscal pressure that will continue to erode the foundation of Kentucky's state and local tax system if not addressed.

These issues are not new. Last year, the Kentucky Long-Term Policy Research Center and its conferees scrutinized and discussed many of them. A consultant to the Appropriations and Revenue Sub-Committee On Tax Policy Issues of the Kentucky General Assembly raised many of the same problems facing Kentucky and offered recommendations for reform to the legislature. This year, the struggling economy has unveiled the impact of these factors on state revenues. Remedies are already in motion throughout the nationS, including the Streamlined Sales Tax Project, which represents a significant advancement in multistate cooperation on tax issues, and the closure of significant corporation tax loopholes in several states. It remains to be seen how quickly Kentucky will act to alleviate these pressures and whether their actions will be consistent with the principles of sound tax policy.

[273] The author thanks Mike Childress, David Wildasin, Mary Lassiter, Bob Cox, Gene Brown, Amy Watts, Brad Thomas, and Michael Jones for their assistance on this project. The views expressed in this chapter are solely those of the author and do not necessarily represent the position of the Governor's Office. Errors are, of course, the sole responsibility of the author.

[274] David E. Wildasin, et al., *Financing State and Local Government: Future Challenges and Opportunities* (Frankfort: Kentucky Long-Term Policy Research Center, 2001).

[275] Economic development advocates like to add "competitiveness" and usually try to elevate it above the others. Competitiveness in tax reform debates tends to come down to equivalence with other states. However, efficiency argues for similar rates across borders as well to minimize distortions in economic decisions to spend, hire, invest, and locate.

[276] See Merl Hackbart, "Tax Reform: Review and Perspective," in *Financing State and Local Government*.

[277] Donald Bruce and William F. Fox, "E-Commerce in the Context of Declining State Sales Tax Bases," Federation of Tax Administrators, Feb. 2000, 9.

[278] Nicholas Johnson, *The State Tax Cuts of the 1990's, the Current Revenue Crisis, and Implications for State Services* (Washington: Center on Budget and Policy Priorities, 2002).

[279] Johnson.

[280] Office of the Governor, *An Assessment of Kentucky's Fiscal Condition*, Frankfort, Nov. 2002: 11A.

[281] Bruce and Fox, "State and Local Sales Tax Revenue Losses from E-commerce: Updated Estimates," *State Tax Notes* 15 Oct. 2001: 203-214.

[282] U.S. Census Bureau, "Retail E-Commerce Sales in Third Quarter 2002 Were $11.1 Billion, Up 34.3 Percent from Third Quarter 2001, Census Bureau Reports," News Release, 22 Nov. 2002 <http://www.census.gov/mrts/www/ecom.pdf>.

[283] Raymond Ring, "Consumers' Share and Producers' Share of the General Sales Tax," *National Tax Journal* 52.1 (1999).

[284] Department of Revenue Compliance Study, State of Washington, Dec. 1996: 1.

[285] Office of the State Budget Director, Governor's Office for Policy Research, "The Cost of Kentucky's Enterprise Zones," Commonwealth of Kentucky, *Policy Paper Series* 2.1 (Jan. 2002), and KEZA Annual Report.

[286] The Kentucky Revenue Cabinet and the Cabinet for Economic Development are the source of these data.

[287] Wildasin, et al.

[288] Kentucky Population Research, University of Louisville, "Kentucky Population, Census 1990, 2000, and Projections to 2030," Excel Spreadsheet, State Data Center Web site <http://cbpa.louisville.edu/ksdc/kpr/pro/webcoage5.xls>.

[289] Richard Pomp, "The Future of the State Corporate Income Tax: Reflections (and Confessions) of a Tax Lawyer," *State Tax Notes* 23 March 1999.

[290] William F. Fox, *Report to the Sub-Committee on Tax Policy Issues: Committee on Appropriations and Revenue*, Kentucky General Assembly, 27 Feb. 2002: 20.

[291] *Quill Corporation v. North Dakota*, 112 SCt. 1904 (1992)

[292] For a discussion of this estimate by the Multistate Tax Commission, see "What's in a Number? Debating MTC's Nexus Bill Revenue Impact Estimate," *State Tax Notes* 15 Oct. 2001.

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